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Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Smart Yankees
Baseball and Business
Time Tells on Anyone
Training Ground
Fast-Change Artists
Random Pilferings
How Odd Can You Get?

Smart Yankees

Newest investment for the rich New York Yankees:

They are buying air conditioned homes ($20,000 to $40,000 each) in St. Petersburg, Fla.

These air conditioned houses they'll rent out in the summer baseball season, live in during the winter.

Baseball and Business

There's an oldie about a speaker who proclaimed: "Honor the Pioneer Fathers of our country. They wrested our land from the wilderness, fought off the Indians, worked from sunup to sundown," etc., etc.

Arose a heckler: "I say, Honor the Pioneer Mothers. They had to put up with the same hardships. And they also had to put up with the Pioneer Fathers."

Behind every Great Athlete is a neglected family. Sad, but that's the way it is.

During the season ballplayers are away from home most of the time. And the really good professional athletes who are off-season salesmen (and most of them are) are at the beck and call of their customers at all times.

A customer often wants extra time from this athlete-salesman, as a personal friend:

(1) To play golf or poker;
(2) To hold his hand after a personal setback;
(3) To witness the signing of a contract;
(4) To help him put over a community project;
(5) To listen, and to be shown off as a "celebrity."

And when the customer calls, the salesman jumps. No matter that his wife has to call off a dinner party, or take the kids to a picnic by herself. The customer comes first.

The only way any salesman can prove that his extra-curricular activities do pay off is to move to a rival company and take a lot of accounts with him. That he hates to do, because loyalty to friends is his stock-in-trade.

Usually, though, there's a payoff for lonely families and associates. They live pretty well,

(Concluded on Page 12, Col. 1)

Compressor Shipments Up 5% In January

WASHINGTON, D. C.—Manufacturers' shipments of compressor bodies used in air conditioning and refrigeration units were up more than 5% in January as compared with the first month of 1956, it is reported by Geo. S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute.

The figures, which do not include compressors used in household refrigerators, were compiled from reports made to ARI by manufacturers whose output is estimated to represent in excess of 90% of the industry, he said.

Actual shipments for the month totaled 398,508 units, compared with 377,891 in the same period of 1956. These totals do not include compres-

(Concluded on Page 21, Col. 1)

UA Adopts 5-Yr. Refrigeration Training Plan

CLEVELAND—A course of study specifically designed for refrigeration and air conditioning apprentices and journeymen has been adopted by the national office of the United Association, Ray Kromer, executive vice president of the Refrigeration & Air Condition Contractors Association, reports.

The course provides for a five-year training program for mechanics specializing in air conditioning and refrigeration work.

RACCA Director Harvey W. Hottel and Kromer submitted the recommended course of study to the Apprentice Training Div. of the UA the first week in April.

The recommended course followed closely the one developed by and now in use in the Miami, Fla. joint training program.

After study, the Apprentice Training Div. of the UA recom-

(Concluded on Page 33, Col. 3)

125 To Exhibit May 4-8 In West Coast's 'Biggest' Show

Restaurateurs To 'Grow with Market' May 6

CHICAGO — Sixty-one manufacturers of refrigerated equipment for the food service trade will exhibit their new products at the National Restaurant Association Exposition at the Navy Pier here May 6 to 10.

The exposition coincides with the 38th annual convention of the association. Theme is "Grow with the Market."

More than 1,250 exhibits strung along both wings of the pier will make this the largest exposition ever staged by NRA, according to Ward Webster, general convention chairman.

The show will be open from 9 a.m. to 6 p.m. on Monday, which is "Dealers and Wholesalers Day." Equipment suppliers are permitted to attend the

(Concluded on Page 23, Col. 1)

2 Conferences, Regional ASHAE Meeting Planned To Coincide with Show

LOS ANGELES — Opening Saturday, May 4 at the Shrine Exposition Hall here, the Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit and Conference will be the largest affair of this kind yet to be staged on the West Coast, according to those in charge.

Products of more than 125 manufacturers will be on display from Saturday, May 4 through Wednesday, May 8 (including Sunday). The first three days of the exhibit will be open to members of the industry exclusively, and on the final two days, those of the general public who have an interest in the equipment will be welcomed as well as industry members, according to Fred J. Tabery, exhibit manager.

The show will be open from 2 to 10 p.m. every day except Monday, when it will be open from 1 to 6 p.m.

Two conferences will be held in conjunction with the exhibit. One—on problems of school air conditioning—is scheduled for Saturday morning, May 4. The other, to be held Tuesday night, will deal with general technical

(Concluded on Page 33, Col. 1)

Worthington Appoints Feldmann President

HARRISON, N. J. — The board of directors of Worthington Corp. announced the election of Walter H. Feldmann as president, succeeding Edwin J. Schwanhausser, who becomes vice chairman.

Hobart C. Ramsey continues as chairman and chief executive officer.

Feldmann was first associated with Worthington in 1955 as president and general manager of Electric Machinery Mfg. Co., which became a part of Worthington in that year. He had been with Electric Machinery Mfg. since 1922, and had served as general sales manager and vice

(Concluded on Back Page, Col. 5)

Bulk Milk Tank Installations Rise 92% In '56

WASHINGTON, D. C. — A 91.8% increase in the number of bulk milk tanks installed on farms occurred in 1956 over the number of installations for 1955, a survey just completed by Dairy Industries Supply Association and National Association of Dairy Equipment Manufacturers shows.

As of Jan. 1, 1957, there were 57,336 bulk milk tanks installed on farms in all states. A year earlier, the figure stood at 29,885 (a figure corrected slightly from the announced 30,330 of a year ago). Thus, there was an actual increase of installations amounting to 27,451 in a 12-month period.

The state currently with the most farm tanks installed is Wisconsin, with a total 7,727. Almost 60% of this figure were

(Concluded on Page 22, Col. 4)

Sheet Metal Group Ordered To Halt Burt Interference

AKRON, Ohio — A special committee of the AFL-CIO executive council has ordered the Sheet Metal Workers International Association to stop interfering with the collective bargaining relationship between the United Steel Workers and the Burt Mfg. Co., ventilator manufacturer here.

The Sheet Metal Workers have for several years refused to install or dallied in installing Burt products because they were not made by members of the Sheet Metal Workers union. Burt has had a union shop contract with the steel workers since 1952. This "boycott" has cost Burt tens of thousands of dollars.

The president of the United Steel Workers complained about the Sheet Metal Workers inter-

(Concluded on Back Page, Col. 1)

Commission Suspends Water Surcharge In St. Louis till July 1

JEFFERSON CITY, Mo. — Missouri Public Service Commission has suspended until July 1 a St. Louis County Water Co. surcharge on water-cooled air conditioners which do not use water conserving devices. It was to go into effect May 1.

The commission suspended the surcharge in order to permit time for consideration of a complaint filed with in by 25 customers of the water company which contends the surcharge is arbitrary and not applied on any equitable basis, and is illegal.

Kansas City Rejects Cooling Unit Water-Saver Law

KANSAS CITY, Mo. — The city council recently rejected a proposed ordinance which would have required all air conditioning and refrigeration systems using direct connections to the city water system to be equipped with water savers.

Firm Says Full Plant Cooling 'Pays' In Upped Efficiency, Reduced Costs

PITTSBURGH—Complete air conditioning of all Rockwell Mfg. Co. plants built in the past five years has more than paid for itself in terms of increased efficiency and reduced costs of operation, according to H. Campbell Stuckeman, vice president in charge of plant construction.

"In recent years," Stuckeman said, "Rockwell has expanded its operating facilities to better serve customers in regions where we previously had no plants. Most of these new factories have been located in areas where climatic conditions have made controlled air temperature an especially important consideration.

"Whatever the area involved, however, we have found that complete air control—from a standpoint of both temperature and humidity—has greatly improved our operations."

Advantages achieved through such control, Stuckeman said, have included:

1. Better quality of workmanship—at lower cost—owing to absence of wide fluctuations in temperatures of tools, fixtures, and parts to be machined.
2. Attraction of more qualified personnel owing to the ob-

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Dependable Prescription for Refrigeration & Air Conditioning Equipment

Rx Always Specify READING Copper Tubing

Made by Copper Tube SPECIALISTS

READING TUBE CORPORATION
EMPIRE STATE BUILDING NEW YORK 1, N. Y.
WORKS: READING, PA.

Courts OKs N. O. Nelson Stock Sale for $700,000

DES MOINES, Iowa—Sale of 96% of the common stock of N. O. Nelson Co., bankrupt St. Louis refrigeration, air conditioning, heating, and plumbing supply company, to three Davenport investors for $700,000 has been approved by Federal district court here.

Owned by Automatic Washer Co., Newton, Iowa, also undergoing reorganization under bankruptcy laws, the stock was put up for bidding by the court.

The Davenport group originally bid a lower figure but raised it to $700,000 when Judge Henry N. Graven indicated he would not accept anything less.

Discussion of concrete plans for the supply firm was declined by the purchasing group composed of Glenn Seydel, a businessman, Ralph U. Heninger, an attorney, and another unidentified businessman.

Seydel said his group "is going to maintain and continue to run N. O. Nelson in St. Louis with our first aim to get the company out of bankruptcy.

"We plan to reorganize it and have a number of possible alternatives under consideration, but we haven't decided what we will do yet." No changes in personnel are contemplated, he added.

Seydel stated he will devote his full time to the business after the sale becomes finalized which will be sometime after a legal 40-day period within which interested parties can appeal the court's sale decision.

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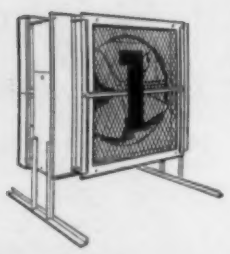
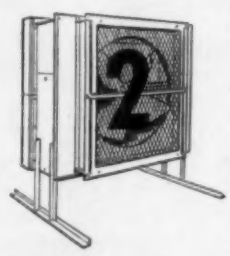
MAXIMUM LIQUID PRESSURE AT EXPANSION VALVE IN WINTERTIME



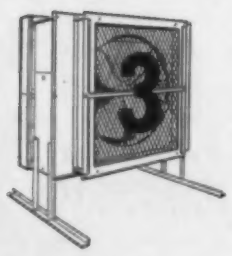
Only the Kramer UNICON plus WINTERSTAT guarantees the full refrigerant pressure *at the expansion valve* for full cooling capacity — even at below 0°F outdoors — *automatically!*

MAXIMUM SUMMER CAPACITY WITH PATENTED WINTERSTAT



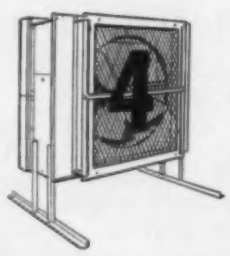
Only Kramer UNICON plus WINTERSTAT guarantees maximum condensing capacity in summer. In hot weather, the patented WINTERSTAT is out of the refrigerant circuit, permitting normal drainage from the condenser without restriction. This assures maximum condensing capacity in summer — *automatically!*

PROMPT DEFROSTING AT ANY OUTDOOR TEMPERATURE



The use of UNICON plus WINTERSTAT makes Kramer THERMOBANK the only low temperature system that can guarantee operation and complete defrosting at any outdoor temperature—even 0°F or lower — *automatically!*

IMMEDIATE COMPRESSOR START-UP REGARDLESS OF OUTDOOR WINTER TEMPERATURE



Only Kramer UNICON plus WINTERSTAT (using modification #1) ensures positive and immediate compressor start-up with pressurestat operating the system, regardless of outdoor winter temperatures at the UNICON and regardless of length of compressor lay-off — *automatically!*

*UNICON is a remote type air-cooled condenser WINTERSTAT is a year 'round automatic head pressure control

WRITE FOR BULLETIN U-210-L

KRAMER TRENTON CO. • Trenton 5, N.J.

43 YEARS OF CONTINUOUS ACHIEVEMENT IN HEAT TRANSFER

Court Rules 'No Abuse of Discretion,' Awards Firm Airport Cooling Job

COLUMBUS, Ohio—Limbach Co. has been awarded the heating, ventilating, and air conditioning contract on the new administration building at Port Columbus.

Work was held up by a law suit filed by The Piping Contractors Co., claiming its bid was "lowest and best."

Common Pleas Court dismissed a petition asking that the city be compelled to cancel the contract with Limbach and award it to Piping Contractors. Judge Myron B. Gessaman ruled that Service Director Floyd C. Redick "showed no abuse of discretion in awarding the contract."

Redick and the airport commission said that while the Piping Contractors' bid was lowest, it was not necessarily the best bid, and Judge Gessaman upheld their argument.

Whirlpool Board OKs Finance Subsidiary; Names Finch as Pres.

ST. JOSEPH, Mich.—Elisha Gray II, president of Whirlpool Corp., announced that the board of directors has approved formation of Appliance Buyers Credit Corp., a finance company wholly owned by Whirlpool. The initial authorized capital is $10 million.

Local offices of the finance company will be opened in a limited number of locations in the near future.

Officers of the new company are Mason Smith, chairman of the board; Robert Finch, president; Walter A. Holt, vice president-treasurer; and Bartley R. Moore, secretary.

Smith continues as vice president and treasurer, Holt as assistant treasurer and Moore as assistant secretary of Whirlpool Corp. Finch was formerly sales finance manager of International Telephone & Telegraph Corp. and president of Kellogg Credit Corp., an I. T. & T. associate. He continues as a director of Kellogg Credit Corp.

For more information about products advertised on this page use Information Center, page 24.

Congress Eyes Bills To Void 'Good Faith' Defense, Provide Small Business Equality

WASHINGTON, D. C.—Bills to provide small businessmen with "equality of opportunity" to obtain their goods at the same prices as their larger competitors are now being considered by Congressional committees.

They are labeled H.R. 11 and S. 11.

They would amend Section 2 (b) of the Robinson-Patman Act to rule out "good faith" as a defense against price discrimination charges when the effect of the discrimination would be to substantially lessen competition and tend to create a monopoly.

Sellers can now use "good faith" as a complete defense when they lower their price to meet that of a competitor in an individual competitive situation.

The House bill was introduced by Rep. Wright Patman, Texas Democrat. It is the same bill that was passed by the House of Representatives in its last session. At that time, however, the Senate version was reported out of committee too late for the Senate to act on it. So the measure died.

'INTENDED TO GUARANTEE SAME TERMS AS CHAINS GET'

Testifying before the Senate committee on the judiciary, which is considering the Senate version of his bill, Rep. Patman said it is "intended to guarantee, for instance, the home-town merchant the right to buy his goods, wares, and merchandise from General Motors, General Mills, General Electric, or General Foods under the same terms and conditions that the chain store across the street is permitted to buy its goods, wares, and merchandise from the seller.

"The pending bills would make it a violation of law for the seller to discriminate against the home-town merchant, whether he is in the dry goods business, the grocery business, the drug business, the service station business, or any other kind of locally owned business."

OPPOSED BY JUSTICE, COMMERCE DEPARTMENTS

The change is supported by the Federal Trade Commission, but is opposed by the Department of Commerce and the Justice Department.

The Department of Justice said one reason it is opposed to the bills is that "a seller constrained by law to reduce prices to some only at the cost of reducing prices to all might well decide to reduce them to none."

Not so, replies Rep. Patman.

He says the bill permits the "good faith" defense only for the purpose of meeting competition in "individual competitive situations."

"In other words," he asserted, "when you lower your price in good faith to meet competition in an individual competitive situation, you are not doing so all the way across the country in all competitive situations."

Rep. Martha Griffiths, Michigan Democrat, told the House that one of her constituents who supported the measure—an appliance dealer—couldn't wait. Unable to buy goods on the same terms as his larger competitors, he padlocked his doors before Rep. Griffiths could thank him for his support.

"This is no single tragedy," Rep. Griffiths declared.

Much Variation In 'Normal' Temperatures Seen Up to Mid-May

DETROIT — Considerable variation from "normal" temperatures, both below and above, are predicted in the U. S. Weather Bureau 30-day forecast for the period from mid-April to mid-May.

The forecast calls for the possibility of considerably below normal temperatures in the upper Great Lakes area; slightly below to near seasonal normal in the plains and south central states; normal season temperatures in the south Atlantic, east coast, and Pacific northwest; and above normal in Florida, the Mississippi Delta, far west, and in parts of Texas, it was explained.

Heavy precipitation was forecast for most of the central part of the country, and all through the Mississippi Valley area including part of the Great Plains, and also in the Pacific Northwest the bureau further noted.

The Weather Bureau points out that the 30-day outlook is not a specific forecast in the usual meteorological sense, but is an estimate of the average rainfall and temperature for the next 30 days based upon the best indications available.

keep coolers
from freezing
32°
install
ALCO
Evaporator
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Alco EPRs hold evaporator pressure to a predetermined level regardless of load changes. Prevents freeze-up and damage to water chillers and beverage coolers. Prevents dehumidification in vegetable and other produce cases.
THEY COME APART IN THE LINE FOR QUICK, EASY SERVICING
See your Alco wholesaler
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853 KINGSLAND AVE. • ST. LOUIS 5, MO.
The one complete line of refrigerant controls: Thermostatic Expansion Valves, Refrigerant Distributors, Solenoid Valves, Suction Line Regulators, Flooded Evaporator Controls and Reversing Valves.
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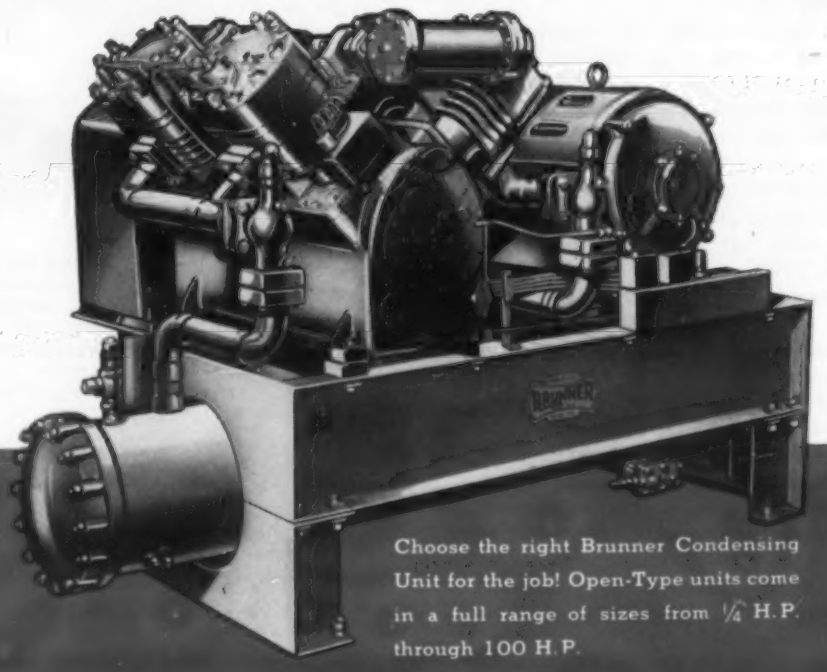
Here's the Brunner team that helps you win and hold customers . . . a complete line of Open-Type and Semi-hermetic refrigeration condensing units backed by 205 distribution centers from coast to coast.

When you want Brunner units or parts in a hurry, call your nearest Brunner wholesaler. It's that easy . . . no long waiting period for shipment from the factory, no red tape. Here's the fastest distribution service in the refrigeration and air conditioning industry.

And if you need to replace parts covered by warranty, your Brunner wholesaler will handle all the necessary details.

There's a Brunner-Metic semi-hermetic condensing unit for every commercial refrigeration application... from 1/4 H.P. through 3 H.P.



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PHOENIX.....Authorized Supply Company
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BAKERSFIELD.....Refrigeration Supplies Distributor
EL CENTRO.....Allied Refrigeration Suppliers, Inc.
EL CENTRO.....Refrigeration Supplies Distributor
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FRESNO.....Thermal Products, Inc.
GLENDALE.....Arrow-Risco, Inc.
LONG BEACH...L. B. Marsh Allied Refrigeration Co.
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LOS ANGELES.....Refrigeration Supplies Distributor
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SACRAMENTO..Acme Supply & Equipment Company
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SAN FRANCISCO.....Refrig. & Power Specialties Co.
SAN GABRIEL.....Arrow-Risco, Inc.
STOCKTON....Refrigerating & Power Specialties Co.

COLORADO
DENVER.....Thermo Supply Company

CONNECTICUT
HARTFORD.....N. W. Day Supply Company
HARTFORD.....Joseph Simons Company
NEW HAVEN.....Resco, Inc.

DISTRICT OF COLUMBIA
WASHINGTON.....Refrigeration Supply Co., Inc.

FLORIDA
FT. LAUDERDALE.....Graves Broward Co.
JACKSONVILLE....Bowen Refrigeration Supplies, Inc.
JACKSONVILLE.....Refrigeration Supply Company
MIAMI.....Bowen Refrigeration Supply, Inc.
MIAMI.....O'Brian Associates
ORLANDO.....R & R Supply Company, Inc.
PENSACOLA.....Cooling & Heating Supplies
ST. PETERSBURG.....Graves Bros. Refrig. Supplies
ST. PETERSBURG.....Mote W. Baird & Son
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TAMPA.....Noland Company

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ILLINOIS
CHICAGO.....Service Parts Company
DECATUR.....Potter Supply Company
EAST ST. LOUIS.....Illinois Electric Works, Inc.
PEORIA.....Polar Supply Corporation
ROCKFORD.....Park Distributors, Inc.
SPRINGFIELD.....Spangler, R. H. Company, Inc.

INDIANA
EVANSVILLE.....Budlock Refrigeration Supply Co.
EVANSVILLE...Ohio Valley Hardware Company, Inc.
INDIANAPOLIS.....Duncan Supply Company
MISHAWAKA.....Valley Equipment Company
RICHMOND.....Gennett & Sons, Inc.
TERRE HAUTE.....Budlock Refrigeration Supply Co.

IOWA
BURLINGTON.....Pioneer Supply Co.
CEDAR RAPIDS.....Thermal Company, Inc.
DES MOINES.....Thermal Company, Inc.
DAVENPORT.....White Refrigeration Supply, Inc.

KANSAS
TOPEKA.....Refrigeration Equipment Company
WICHITA.....Refrigeration Equipment Company

KENTUCKY
LEXINGTON.....Brock-McVey Company
LOUISVILLE.....Mill Industrial Supply, Inc.

LOUISIANA
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LAFAYETTE.....Cooling & Heating Wholesalers
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MINNEAPOLIS.....Thermal Company, Inc.
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ST. LOUIS.....Mechanical Supply Company
ST. LOUIS.....R. H. Spangler & Company, Inc.
SPRINGFIELD.....John A. Rhodes Company

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LINCOLN.....Wickham Supply Company, Inc.
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NEWARK.....Wallwork Brothers, Inc.
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BUFFALO.....Jordan Supply Company
ELMIRA.....Brady Supply Company
MOUNT VERNON.....Eastern Supply Company
NEWBURGH.....*W. A. Case & Son Mfg. Co.
NEW YORK.....Aetna Supply Company
NEW YORK.....Albert Hofeld, Inc.
NEW YORK.....Reese & Long Refrig. Products, Inc.
NEW YORK....Paramount Electric Supply Company
PLATTSBURG.....*W. A. Case & Son Mfg. Co.
ROCHESTER.....Ontario Metal Supply, Inc.
SYRACUSE.....Empire Refrigeration Supply Co., Inc.
SYRACUSE....W. A. Case & Son Manufacturing Co.
UTICA.....Vaeth Electric Company

NORTH CAROLINA
ASHEVILLE.....Hajoca Corporation
CHARLOTTE.....Bowen Refrigeration Supplies
CHARLOTTE.....Henry V. Dick & Company
DURHAM.....Hasco, Inc.
GREENSBORO.....Hasco, Inc.
RALEIGH.....Noland Company, Inc.
RALEIGH.....Henry V. Dick & Company, Inc.
WILMINGTON.....Henry V. Dick & Co.
WILSON.....Noland Company, Inc.
WINSTON-SALEM.....Hasco, Inc.

OHIO
AKRON.....Davey Sales Company
CINCINNATI.....Mason Supply Company
CINCINNATI....Mutual Manufacturing & Supply Co.
CLEVELAND..Cleveland Hermetic & Supply Co., Inc.
COLUMBUS.....Mason Supply Company
DAYTON.....*A. & H. Supply Co.

OKLAHOMA
OKLAHOMA CITY.....Jones-Newby Supply Company
OKLAHOMA CITY.....M & V Supply Company
TULSA.....Jones-Newby Supply Company

OREGON
PORTLAND.....Refrigerating & Power Specialties

PENNSYLVANIA
ALLENTOWN.....Larson Supply Company
ERIE....W. A. Case & Son Manufacturing Company
ERIE.....Erie Refrigeration Supplies
HARRISBURG.....Resco, Inc.
PHILADELPHIA.....Acar Supply Company
PITTSBURGH.....Orr, Inc.
PITTSBURGH.....Proie Brothers, Inc.
READING.....Larson Supply Company
SCRANTON.....Central Service Supply Company
WILKES-BARRE.....Radio Service Company

RHODE ISLAND
PROVIDENCE.....A. E. Borden Company, Inc.
PROVIDENCE..Rhode Island Refrigeration Supply Co.

SOUTH CAROLINA
COLUMBIA.....Henry V. Dick & Company
GREENVILLE.....Henry V. Dick & Company

SOUTH DAKOTA
SIOUX FALLS.....Thermal Company, Inc.

TENNESSEE
CHATTANOOGA.....Peglar's, Inc.
KNOXVILLE.....Knoxville Refrigeration Supply Co.
KNOXVILLE.....Leinart Engineering Co.
MEMPHIS....Budlock Refrigeration Supply Co., Inc.
MEMPHIS.....R. H. Spangler Company, Inc.
NASHVILLE.....J. B. Thomas Company

TEXAS
ABILENE.....C & H Distributing Company
CORPUS CHRISTI...S. Texas Refrig. Supply Company
DALLAS.....Barbeck Refrig. Supply Company, Inc.
DALLAS....Central Engineering & Supply Company
EL PASO..M & M Refrigeration & Electrical Supply
FORT WORTH.....Texas Refrigeration Supply Co.
HARLINGEN.....United Supply Company
HOUSTON.....Johnson Supply Company
HOUSTON.....Lingo Company, Inc.
HOUSTON.....Standard Brass & Manufacturing Co.
LUBBOCK.....R & R Refrigeration Corporation
SAN ANGELO.....Central Electric Company
SAN ANTONIO.....United Supply Company
SAN ANTONIO.....Westbrook Company
TYLER.....Amstan Supply Division
WACO.....Texas Refrigeration Supply Company

UTAH
SALT LAKE CITY.....Commercial Dist. Company

VERMONT
BURLINGTON....The Blodgett Supply Company, Inc.

VIRGINIA
BRISTOL.....Southern Refrigeration Corporation
NEWPORT NEWS.....Noland Company, Inc.
NORFOLK.....Noland Company, Inc.
NORFOLK.....Refrigeration Suppliers, Inc.
ROANOKE.....Southern Refrigeration Corporation

WASHINGTON
SEATTLE.....Refrigerating & Power Specialties Co.
SPOKANE.....Wakefield Supply Company
TACOMA.....Refrigerating & Power Specialties Co.

WEST VIRGINIA
CHARLESTON.....Mason Supply Company
HUNTINGTON...Mechanical Refrigeration Supply Co.
WHEELING.....Mason Supply Company

WISCONSIN
MADISON.....B. T. U. Equipment & Supply Corp.
MILWAUKEE.....Thermal Company, Inc.

*EFFECTIVE MARCH 1957

BRUNNER MANUFACTURING COMPANY, UTICA, NEW YORK

THE BRUNNER COMPANY, GAINESVILLE, GEORGIA

IN CANADA: BRUNNER CORP. (CANADA) LTD., TORONTO, ONTARIO

Sees More Dealers Selling Larger Units

CHICAGO — An increase of between 10 and 15% in the number of retail outlets selling and merchandising room air conditioners when the 1957 summer rush starts, was predicted recently by E. A. Tracey, general manager, room air conditioner division, Mitchell Mfg. Co.

The prediction was made by Tracey following a three-week coast-to-coast trip calling on dealers and distributors.

Several new and important changes emerging this year are foreseen by Tracey. They are:

1. More interest in the 1957 features, "such as Mitchell's 'Roto Cone' 360 degree sweep delivery; thin units; and the new 115-volt, 12-amp., 1-hp. units."

2. Up-grading of customers who are buying units for multiple room cooling to the top end of the dealers' models.

3. A definite swing to higher horsepower units (1 hp. and higher) with special emphasis on the 2-hp. size, which has always been in short supply.

4. Determination of the small to medium size appliance dealers to do a major job in room air conditioner sales.

The trend to higher horsepower units already has been substantiated by figures from the New York market which now shows remarkable percentage gains for the 1, 1½, and 2-hp. units, according to Tracey.

"This is particularly significant," Tracey said, "because the northern metropolitan area markets normally are not expected to produce as great a demand for higher-powered units."

Regarding the industry's present situation, Tracey said pre-season selling by manufacturers has not yet reached the hoped-for level.

In spite of this and despite industry figures showing a "fairly heavy" carryover of 1956 units, the climate is one of general optimism and most distributors and dealers are looking for another record year for room air conditioner sales.

"Actually," Tracey said, there was less dealer inventory in October, 1956 than in the previous year when the carryover was under 200,000 units. Most of the retail inventory was in the hands of large dealers who sold it off in pre-season sales during January and February.

"Small dealers, who constitute the greatest share of the market, are not hampered by unduly heavy inventories and many new dealers are again actively entering the market."

There is a general feeling of confidence in the room air conditioning business among dealers, and movement from distributor to dealer is at a peak.

"Dealers feel that the manufacturers will be more cautious this year in scheduling production and that this will lead to a firming up of prices," he said.

Tracey reports that the dealers he talked with expressed a greater confidence to concentrate on sales of room air conditioners.

Also, he stated, refrigeration sales fell off last summer and there is as yet no general pick-up this year.

"Therefore the dealer needs a major item to give him volume, particularly during spring and summer months. More dealers are beginning to realize that volume room unit sales are the answer," Tracey said.

Early Promotion Concentrated In Radio Spots Upping Price's Room Unit Sales

NORFOLK, Va.—A concentrated pre-season radio spot program is paying off in room air conditioner sales for a local dealer.

Price's Inc. has "a complete program" this year designed to sell as "many units as possible" in the period "before hot weather comes," according to W. E. "Ellie" Grumiaux, Jr., advertising manager.

"Last year," he said, "by starting to promote early, we found we were able to make about 50% of our air conditioner sales by mid-June, or before the summer season."

To sell the units, Price's buys radio spots, and backs up these spots with mail promotion. For example, this spring Price's teamed up with Joe Foulkes, "Mr. Weather" of Norfolk, who gives a five-minute weather forecast five days a week at 5:30 p.m. He also gives the CBS World News Roundup every morning between 8 and 8:15. For six weeks he'll plug Price's Amana room air conditioners before or after his programs, it was noted.

Price's also tells about Amana air conditioners three times a day, five days a week on the ABC outlet in Tidewater, Va. Then on one of the larger independent stations in the area, Price's pushes Kelvinator air conditioners three times daily. The store's newspaper tie-ins will be primarily on Kelvinator and General Electric.

Grumiaux says "the theme of a pre-season sale is believable if backed up with such reasons as:

Price's has trained installation crews available now to install air conditioners before the seasonal rush begins.

The firm is anxious to install these new units now so customer's friends will see, admire, and buy.

We're trying to move last year's unit (Price's no longer has any).

Gramiaux indicated he has also found excellent advertising points to be:

1) Free survey — the company will check the customer's wiring, and survey to find just what unit will best cool a given area.

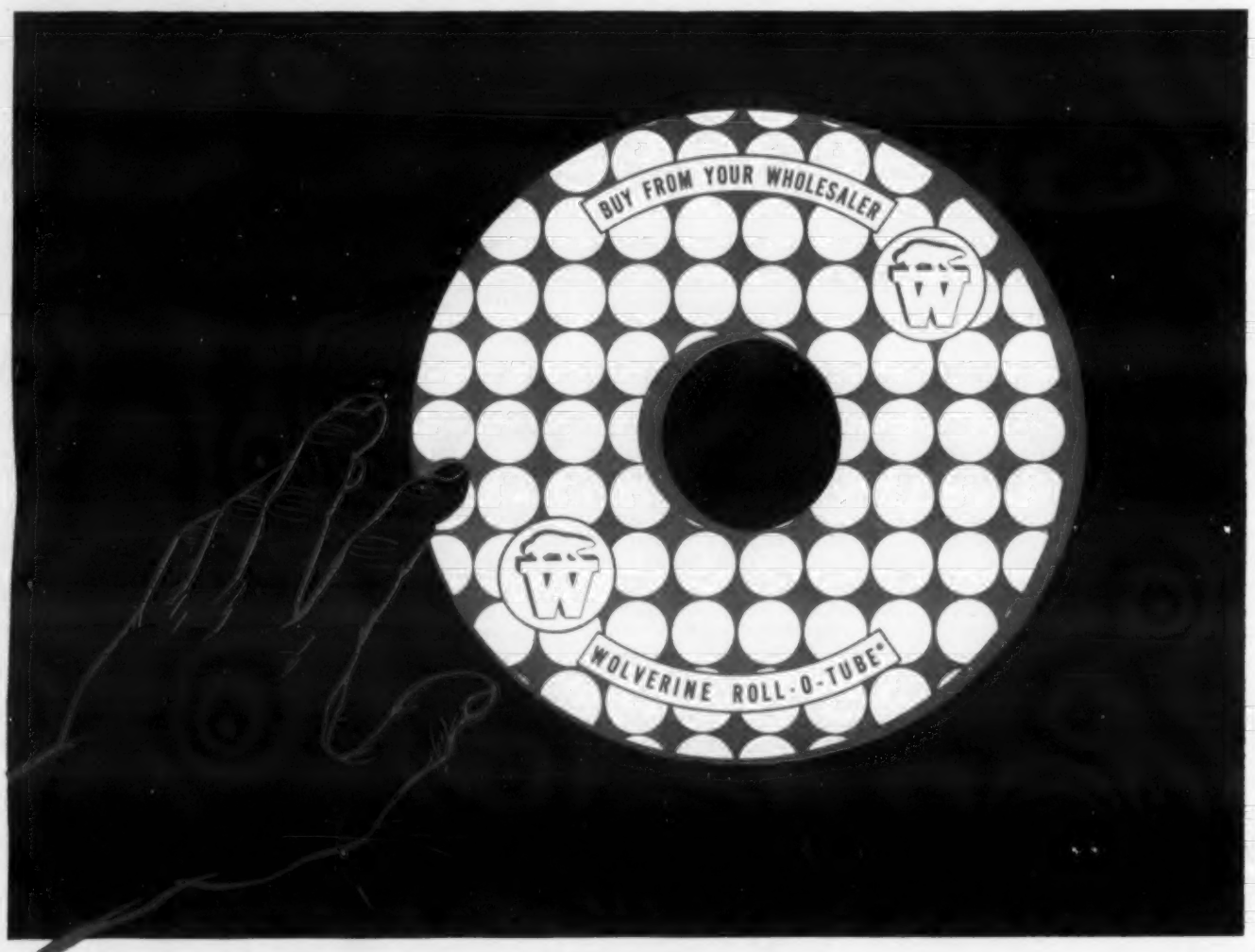
2) Buy now and finance both the unit and wiring on low, budget terms — first payment not due until hot weather.

A direct mail piece mailed to 1,000 business and professional men in downtown Norfolk kicked off the air conditioning season, it was stated. The folder included a letter describing older units and says "most of you businessmen have already begun air conditioning your work area, but, if you have not completed the job, here is an opportunity to do so."

Reasons for giving these people a chance at the savings:

1) "You have the resources to pay now. . . .

2) We must install these units before the seasonal rush."



customer-minded countermen

REACH

for the carton that's easiest to sell

Keeping customers informed of the latest product improvements is a sure-fire method for keeping them happy—*and sold!* That's why so many wholesaler countermen reach for Wolverine Roll-O-Tube® when customers ask for copper water tube or copper refrigeration tube.

Roll-O-Tube has a host of user advantages. By fastening the tube at one end and rolling the carton back, Roll-O-Tube acts as a time-saving reel. Because it is round, and rolls, it is easy to handle. Its convenient center hole makes carrying easy and its zipper-like gummed tape opening leaves the carton intact—lets it act as the perfect storage spot for unused tube.

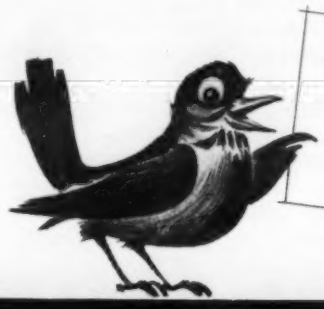
Next time a customer asks for copper tube, reach for Wolverine Roll-O-Tube and show him its work-saving features. Tell him, too, that it contains rigidly quality controlled, completely dependable Wolverine copper tube. It's the perfect formula for making sales—and making friends. Write, too, for your copy of "Wolverine Tube is Easy To Sell."

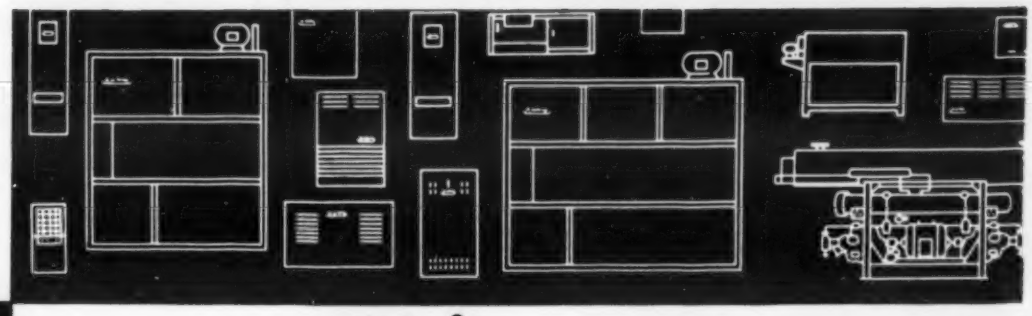
CALUMET & HECLA, INC.
CALUMET DIVISION
WOLVERINE TUBE DIVISION
FOREST INDUSTRIES DIVISION
GOODMAN LUMBER COMPANY
CALUMET & HECLA OF CANADA LIMITED
CANADA VULCANIZER AND EQUIPMENT COMPANY LIMITED

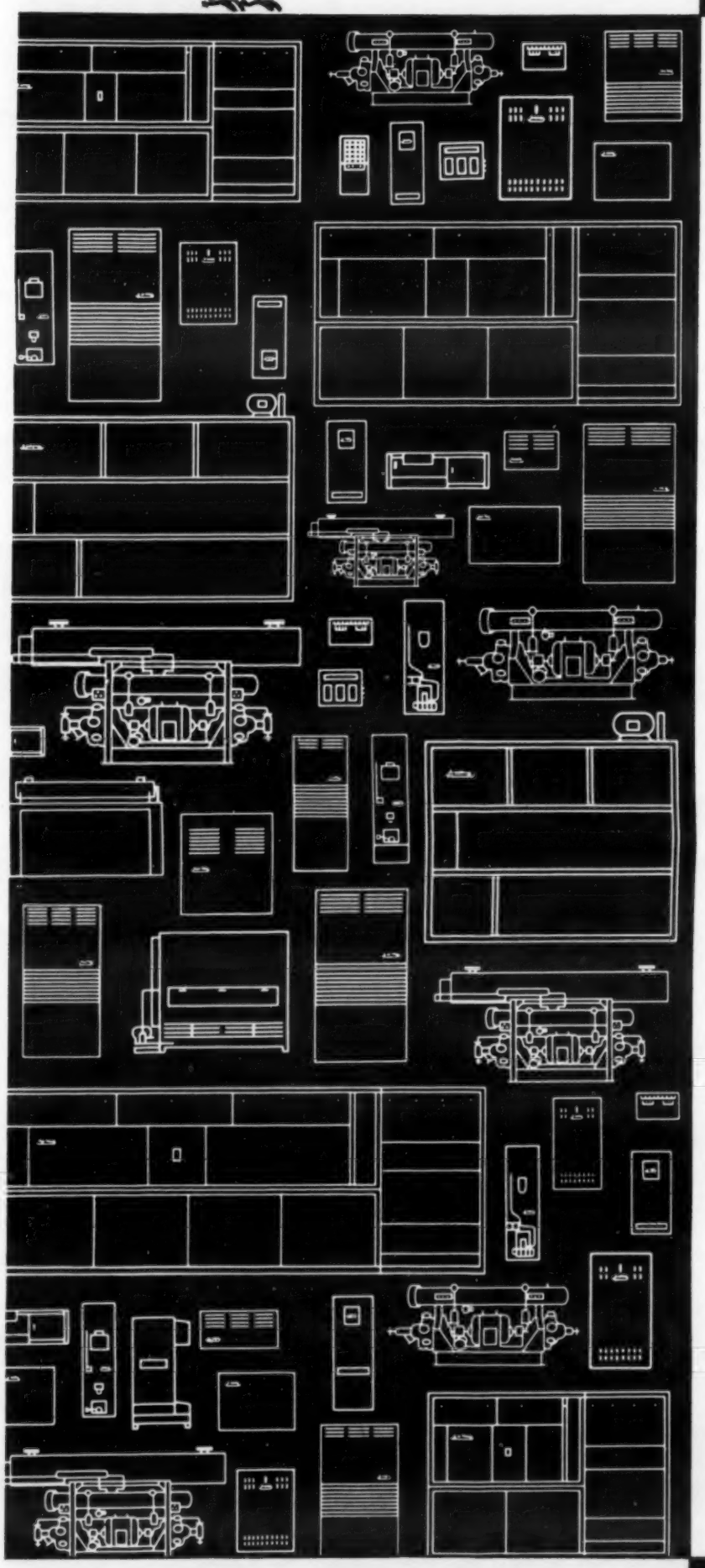
WOLVERINE TUBE
Division of Calumet & Hecla, Inc.
1413 CENTRAL AVE., DETROIT 9, MICH.
Manufacturers of Quality-Controlled Tubing and Extruded Aluminum Shapes

PLANTS IN DETROIT, MICHIGAN, AND DECATUR, ALABAMA. SALES OFFICES IN PRINCIPAL CITIES.
EXPORT DEPARTMENT, 13 EAST 40TH STREET, NEW YORK 16, NEW YORK

For more information about products advertised on this page use Information Center, page 24.







287*

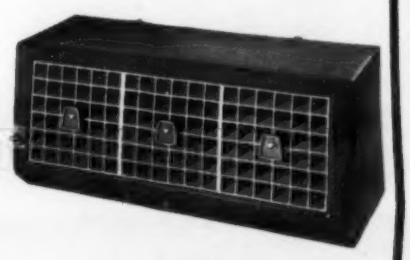
~~286~~ WAYS

TO SATISFY YOUR CUSTOMERS!

...with Chrysler's AIRTEMP heating and air conditioning

* Model 2931-1

NEW—FOR CARS!



AIRTEMP'S 287TH MODEL is a car air conditioner. Compact, convenient—car owners love it. Fits under instrument panel, not in trunk. Another fast growing product in the cooling field. Get your share of this new and profitable business with an Airtemp franchise.

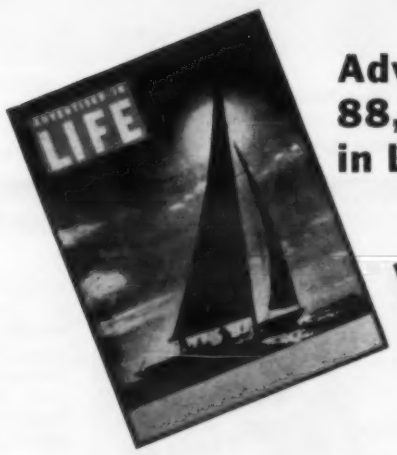
An Airtemp franchise lets you satisfy *any* air conditioning need, small or large.

Airtemp offers you 287 models!—by far the most in the industry. Includes every type of room air conditioner...waterless and water-cooled air conditioning for homes and business ...oil and gas furnaces—and now a car conditioner!

All are engineered by Chrysler for efficient, trouble-free operation. Your customers *stay* satisfied.

Choice franchises still available—send coupon for information.

Airtemp DIVISION CHRYSLER CORP



Advertised to 88,081,000 people in LIFE and READER'S DIGEST

AIRTEMP DIVISION, Chrysler Corporation
Dayton 1, Ohio

Gentlemen: Please rush full information on the Airtemp franchise!

NAME_____

ADDRESS_____

CITY_____

ZONE_____ STATE_____

For more information about products advertised on this page use Information Center, page 24.

Sells over 50% of All Area Freezers

MORE THAN half the home freezer sales in the Colorado Springs, Colo. area in the last two years were made by Rex Frozen Foods, Inc. under direction of Michael Mendelsohn, president (seated) and Ray Constable, sales manager.

A FAST-FREEZE room makes possible a wide selection of fresh frozen meats and processed foods.

Asks Court To Drop FTC Charge on Sale of Freezers, Frozen Foods

PHILADELPHIA — Renaire Corp. of Pennsylvania has asked the U. S. Court of Appeals for the Third District to halt hearings before the Federal Trade Commission on an FTC complaint.

The company and 10 other Renaire corporations in adjoining states were accused of making false and deceptive statements in the sale and distribution of home freezers and frozen foods.

FTC attorneys recently filed a motion calling for dismissal of Renaire's suit. The court is expected to rule on the motion May 6.

The company says it moved last October that charges against nine of the 11 companies be dismissed on the ground that they were engaged in intrastate commerce and therefore did not come under FTC jurisdiction.

Renaire further argued that it owned a packing plant and therefore was a packer, within the meaning of the Packers & Stockyards Act of 1921.

Several other companies have raised the issue of whether or not a company can buy a packing plant to escape from a commission action. As a packer they would come under the jurisdiction of the U. S. Department of Agriculture.

Rules Packers Exempt From FTC Jurisdiction

WASHINGTON, D. C. — A Federal Trade Commission trial examiner recently ruled that any business with an interest in a meet packing plant is exempt from FTC jurisdiction.

Under the law, Frank Hier, FTC examiner said, any business having an interest in a meat packing business is subject to U. S. Dept. of Agriculture jurisdiction on unfair trade practices.

This decision, it was noted, is not final. Andrew C. Goodhope, FTC attorney in the case, said he would appeal the ruling.

Although Hier's ruling was specifically in the case of Food Fair, Inc., Philadelphia supermarket chain, charged with inducing illegal promotional allowances from its suppliers, he made it clear that the ruling covered much broader ground.

Hier made no mention of the case involving Renaire Corp. of Pennsylvania and the 10 other Renaire companies. However, if his ruling is upheld, it is believed probable that the FTC Renaire case will be dismissed, since Renaire also claims exemption from FTC jurisdiction because it owns a meat packing plant.

1-In-20 Families Buys Home Unit from Food Plan Operator In 2 Yrs.

COLORADO SPRINGS, Colo. —Rex Frozen Foods here credits use of national brands with a home freezer volume of 612 Norge sales in 1956.

This is an increase of 161 units over the 1955 total of 451, according to the company.

Michael Mendelsohn, president of Rex Frozen Foods, and his half-dozen salesmen "grossed more than 50% or total freezer sales in the 100,000-population Colorado Springs area for the last two years," it was further claimed.

"One out of every 20 families in Colorado Springs area have purchased Norge home freezers from us in the past 24 months," Mendelsohn declared. The firm is basically a freezer food plan outlet.

Mendelsohn raises or personally buys all the beef his firm distributes. He also makes available complete lines of processed foods under nationally-known brands.

For quick consumer service, a fast freeze room, cold room, and meat packaging room are maintained in the same building with general offices and freezer display area.

Claims Liability on Food Freezer Dept.

NEW YORK CITY — Federated Department Stores filed judgment in Supreme Court here against E. Greenhut Corp. and Eugene Greenhut for $31,060 on a claim stemming from a food freezer department operated in Federated's Cincinnati store, it was recently announced.

The complaint stated that on Aug. 17, 1954, Federated agreed to provide Greenhut Corp. with 20,000 sq. ft. of floor space at John Shillito Co., Cincinnati, for a food freezer department, it was added.

Federated claimed $23,667 for the period the department was in operation, and $7,355 for a four-month period after Greenhut discontinued the department. Eugene Greenhut guaranteed the corporation's liability under the agreement, Federated contended.

Why Admiral uses Bundyweld Tubing

The evaporator in the Admiral Model D-950 refrigerator is of new design. Its self-supporting coils need no plate-type reinforcement; can be fabricated faster, at lower cost. Bundyweld's unique physical properties helped get the design off the blueprint and into production.

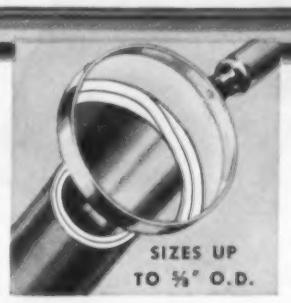
BUNDYWELD IS DOUBLE-WALLED FROM A SINGLE STRIP

Bundyweld starts as a single strip of copper-coated steel. Then it's . . .

continuously rolled twice around laterally into a tube of uniform thickness, and

passed through a furnace. Copper coating fuses with steel. Result . . .

Bundyweld, double-walled and brazed through 360° of wall contact.



← NOTE the exclusive Bundy-developed beveled edges, which afford a smoother joint, absence of bead, and less chance for any leakage.

For more information about products advertised on this page use Information Center, page 24.

Polk Offers Homeowners White Goods, Furniture On 5-Year Credit Terms

CHICAGO — Five-year credit terms are being offered customers here by Polk Bros. for the purchase of home furnishings, it was reported recently.

On the local level at least, it is believed this is the first time that five-year terms have been used.

The ad which announced the new terms said one down payment can buy not only white goods but "can also include a home-full of furniture and carpeting."

According to Lester Bachman, Polk executive vice president, the carrying-charge on this arrangement is about 8%. The company has a dual arrangement for carrying the credit papers. They are handled by both the store and a local bank.

Bachman said the five-year term arrangements "will make it possible for young couples to furnish their homes at one time rather than room by room as many are now doing."

To qualify for the five-year credit terms, a consumer must meet certain qualifications, the store executive further explained.

Each "deal" is handled individually but among the requirements are 1) the consumer must be a homeowner; 2) there must be an unpaid balance of $1,000; and 3) the amount of the down payment is also determined by what other financial obligations the consumer has.

Newest Nation To Get First Kelvinator Shipment

DETROIT — The first shipment of Kelvinator appliances to the world's newest nation, Ghana, West Africa, was scheduled for delivery to A. G. Leventis & Co., Ltd., the company's distributor at Accra, capital of Ghana, by mid-April. It included refrigerators and room air conditioners.

Formerly the Gold Coast, a British colony, Ghana became an independent nation in March. Kelvinator has been shipping to the Gold Coast for more than 25 years.

Oldest communication with the Gold Coast remaining in the company's file is dated April 21, 1932, and is a response to a service complaint from Accra about expansion valves and thermostats for the bulky "open-type" refrigerating mechanisms of that period.

It promises new and better replacement parts, without any charge.

Westinghouse Names Regional Marketing Chiefs; They Confer To Make Switchover Work Smoothly

PITTSBURGH—The men who will direct regional activities of the two new organizations that will market Westinghouse's consumer products assembled here recently for conferences.

All but one are veterans of the corporation's sales group with 10 to 30 years' service to their credit.

TAKE ASSIGNMENTS AFTER CONFERENCE

Richard J. Sargent, general manager of marketing and distribution for all of Westinghouse consumer products divisions, said they would assume their new assignments immediately after the conferences. At that time they will start studies of their regions to determine the layout of their districts and the personnel to man them.

He added that the switch over from the present distribution system to the new would be executed on a region by region basis, with the first move scheduled to be made soon.

Louis G. Berger, general manager of Westinghouse Appliance Sales, said that these men would be regional managers in his organization:

REGIONAL MANAGERS FOR APPLIANCES

Leo M. Cronson, manager of the middle Atlantic region of the Westinghouse Electric Supply Co., will take charge of Westinghouse Appliance Sales' combined eastern and middle Atlantic regions. He will continue to maintain his office in Philadelphia.

L. G. Hardy, manager of Wesco's southeastern division, with offices in Atlanta, will have charge of Westinghouse Appliance Sales' southeastern division with headquarters continuing in the Georgia capital.

Jess W. Haynes, manager of Wesco's central region, will take charge of Westinghouse Appliance Sales' central region, continuing his offices in Cleveland.

W. A. Douglass, presently central regional manager for the major appliance division, Westinghouse Electric Corp., with headquarters in Cleveland, will become manager of Westinghouse Appliance Sales' northwestern region with offices in Chicago.

J. J. Eagan, Wesco's regional sales manager in the southwest, will manage Westinghouse Appliance Sales' southwestern region, with offices continuing in St. Louis.

Martin B. Sauer, Pacific coast regional manager for Wesco, will direct Westinghouse Appliance Sales' coast activities from San Francisco.

George H. Meilinger, general manager of the Factory Field Sales force, chose four regional managers for the major appliance division of Westinghouse Electric Corp., two executives from the portable appliance divisions, and one from the air conditioning division to head up regional activities of his group.

FACTORY FIELD SALES FORCE MANAGERS

William H. Loeber, New York City; Elmer M. Binns, Philadelphia; M. E. Lanning, Atlanta; and Walter T. Baker, San Francisco, are the major appliance veterans who will head Factory Field Sales groups in the eastern, middle Atlantic, southeastern, and Pacific coast regions, respectively. They will operate from their present headquarters.

James E. Hugo, manager of distribution for the portable appliance division at Mansfield, Ohio, and W. R. Cooney, who has been with Westinghouse for about a year and is regional manager for portables on the Pacific coast, will direct Field Sales forces in the central region and northwestern region, respectively. Hugo will maintain his offices in Cleveland and Cooney in Chicago.

R. J. Moore, sales manager of the air conditioning division in Staunton, Va., will have charge of the southwestern region with offices at St. Louis.

for this new, low-cost evaporator

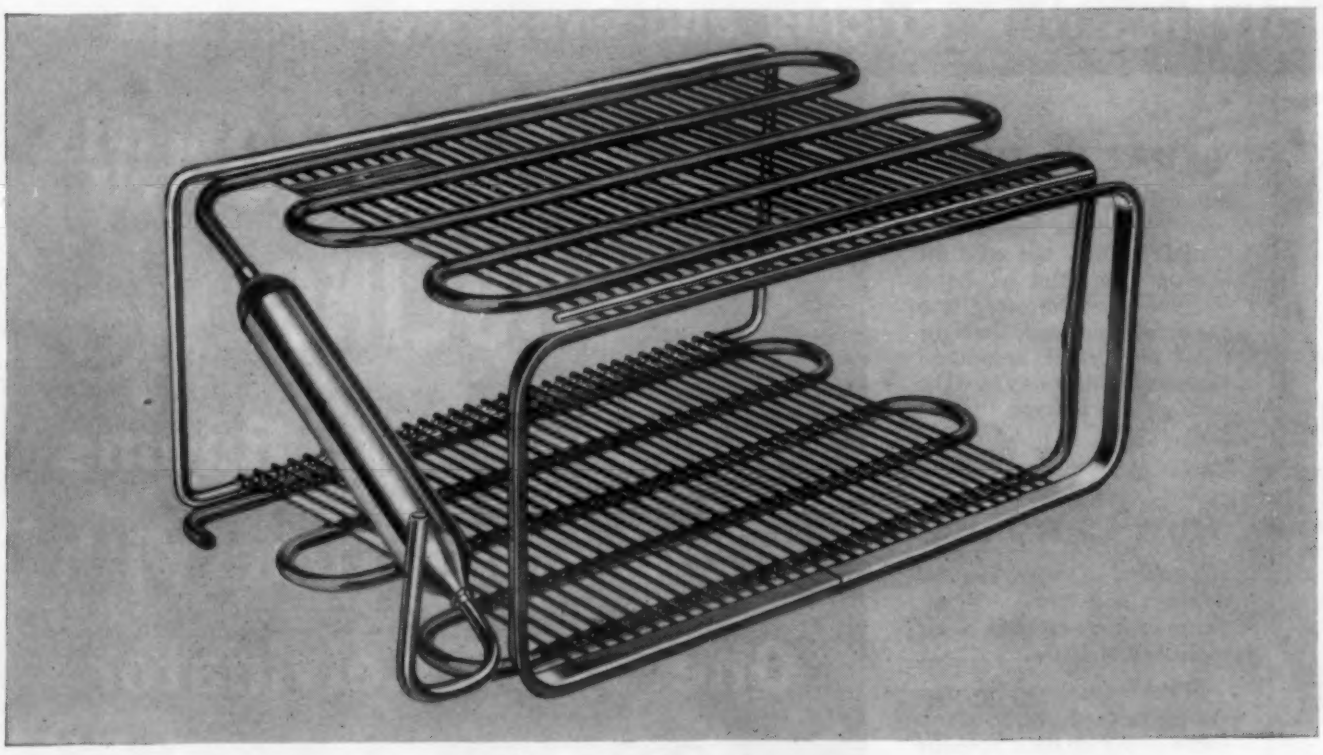
Bundyweld's economy and ductility contribute to a new concept in freezer-compartment design

Admiral Corporation designed a new, low-cost evaporator, in which the coils were self-supporting. It required tubing *economical* enough to make the cost-cutting design pay off; *ductile* enough to take right-angle bends without collapsing or leaking. So naturally, Admiral specified Bundyweld® Tubing.

Bundyweld's unique physical properties have been the answer to many a designer's nightmare. It's the only tubing double-walled from a single copper-coated steel strip, and metallurgically bonded through 360° of wall contact. Result: tubing with high tensile strength . . . high bursting strength . . . superior resistance to vibration fatigue — tubing that is *leakproof by test.*

And Bundy® offers you even more than finest quality tubing. Modern fabrication facilities will turn out simple or complex shapes, to your specifications. You'll get on-time deliveries to help you maintain tight production schedules. And engineering assistance—from a staff famed for solving tubing problems—is yours for the asking. If you make evaporators, compressors, or condensers, Bundyweld Tubing and Bundy services can team up to save you time and money. Call, write, or wire us today.

BUNDY TUBING COMPANY, DETROIT 14, MICHIGAN



Admiral Corporation designed this highly efficient, low-cost evaporator; turned to Bundy's modern fabrication facilities for mass production of the serpentine coils. Bundy offers *you* fast service, on-time delivery, free design aid. Bundyweld Tubing is shown here in its natural copper color.

BUNDYWELD® TUBING

Bundy Tubing Distributors and Representatives: ***Massachusetts:*** Austin-Hastings Co., Inc., 226 Binney Street, Cambridge 42 • ***Pennsylvania:*** Rutan & Co., 1 Bala Ave., Bala-Cynwyd • ***Midwest:*** Lapham-Hickey Steel Corp., 3333 W. 47th Place, Chicago 32, Ill. • ***South:*** Peirson-Deakins Co., 823-824 Chattanooga Bank Bldg., Chattanooga 2, Tenn. • ***Southwest:*** Vinson Steel & Aluminum Co., 4606 Singleton Blvd., Dallas, Texas • ***Northwest:*** Eagle Metals Co., 4755 First Avenue, South, Seattle 4, Wash. • ***Far West:*** Pacific Metals Co., Ltd., 2187 S. Garfield, Los Angeles 22, Calif. • Pacific Metals Co., Ltd., 3100 19th Street, San Francisco 10, Calif.

Bundyweld nickel and Monel tubing are sold by distributors of nickel and nickel alloys in principal cities.

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, ENGLAND, FRANCE, GERMANY, AND ITALY

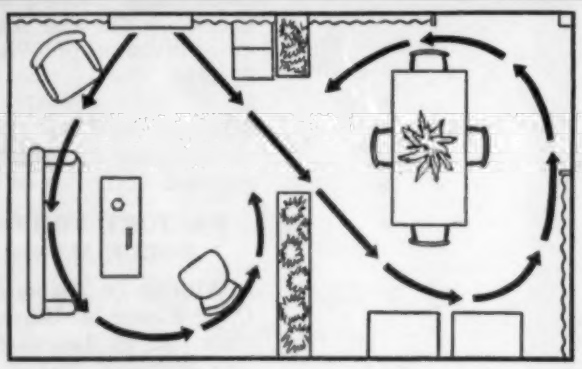
KELVINATOR WITH TWO-DIRECTIONAL COOLING

1957's Greatest Merchandising Feature

Southern Markets Report Dealer Retail Sales of New 1957 Kelvinator Air Conditioners . . .

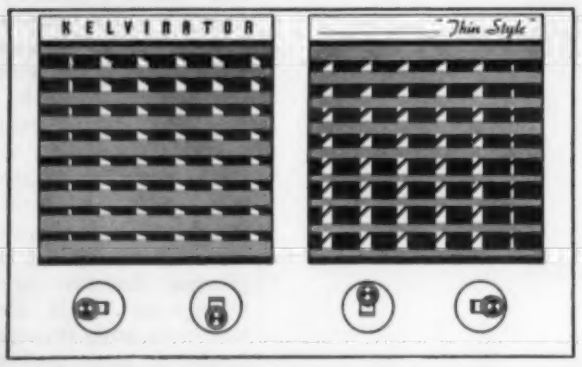
RETAILERS SOLD 3 TIMES AS MANY THRU MARCH 1ST AS IN 1956!

Convincing Proof of Customer Endorsement of Kelvinator's New Models, New Styling, New Pricing and Great New Feature



WHAT IT DOES

Flick the control knobs and, with Kelvinator Two-Directional cooling, the cold air stream from the left-hand louvers can be directed into the living room while the right hand air stream is poured through the doorway into the dining room beyond.



HOW IT WORKS

Horizontal louvers can be rotated up or down to direct either or both streams of air *at the height desired.*

Vertical louvers can be rotated far to the right or left to focus either or both streams of air *in the direction desired.*

TWO-DIRECTIONAL COOLING

that Cools Two Rooms at the Same Time with One 1957 Kelvinator Air Conditioner!

Kelvinator MEANS BUSINESS

Division of American Motors Corporation, Detroit 32, Mich.

For more information about products advertised on this page use Information Center, page 24.

OUT-DEMONSTRATES...OUT-PERFORMS ALL OTHERS

A Model to Fit Every Sales Opportunity

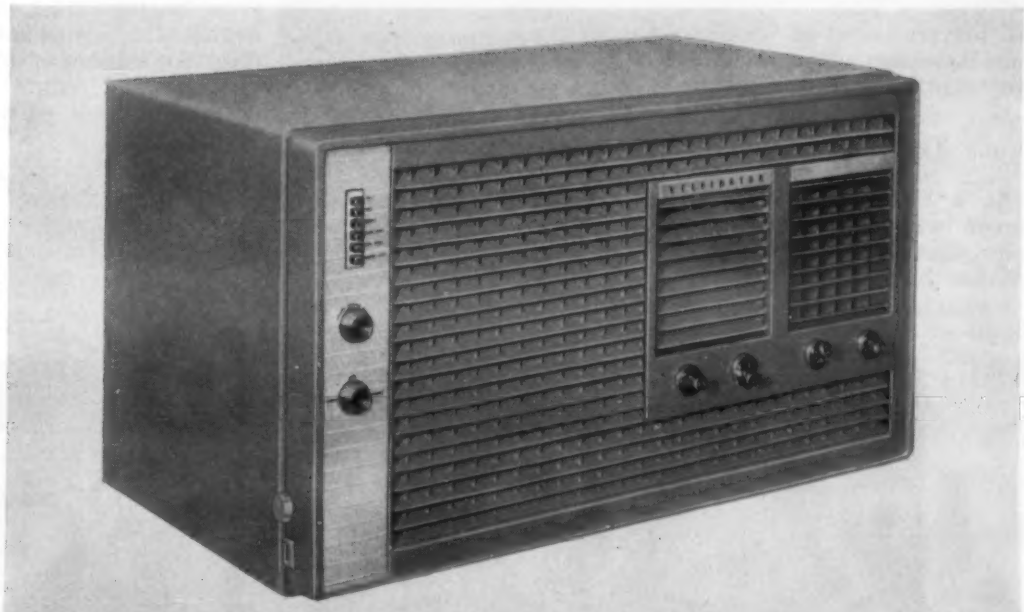
KELVINATOR "THIN-Style" MODELS

with TWO-DIRECTIONAL COOLING

INSTALL IN THE WINDOW OR THROUGH THE WALL

Every one of the slim and elegant new "THIN-Style" models has Two-Directional cooling, thermostatic control, 3-speed blower, fresh air and exhaust vents, replaceable Fiberglas filters. New Kelvinator "THIN-Style" models install in the window or through the wall. They extend only 2½" into the room if wall mounted; outside overhang is kept to a minimum.

"THIN-Style" Model RCG-109WS 1 H.P., 115 Volts
"THIN-Style" Model RCG-109W 1 H.P., 230 Volts
"THIN-Style" Model RCG-159W 1½ H.P., 230 Volts



KELVINATOR CUSTOM MODELS with TWO-DIRECTIONAL COOLING

All Custom Models mount flush with the window sill. Thermostat and fan switch are combined in a single simple dial control. Replaceable Fiberglas filters.

CUSTOM LINE MODELS

Model RCG-78RS ¾ H.P., 7½ Amp., 115 Volts
Model RCG-108RS 1 H.P., 11.2 Amp., 115 Volts
Model RCG-158R 1½ H.P., 230 Volts
Model RCG-108R 1 H.P., 230 Volts

3 NEW 115 VOLT MODELS

¾ H.P. 7½ AMP.
115 Volt Custom Model

1 H.P. 10.8 AMP.
115 Volt "THIN-Style" Model

1 H.P. 11.2 AMP.
115 Volt Custom Model

BIG NEW 1957 TRAFFIC BUILDER

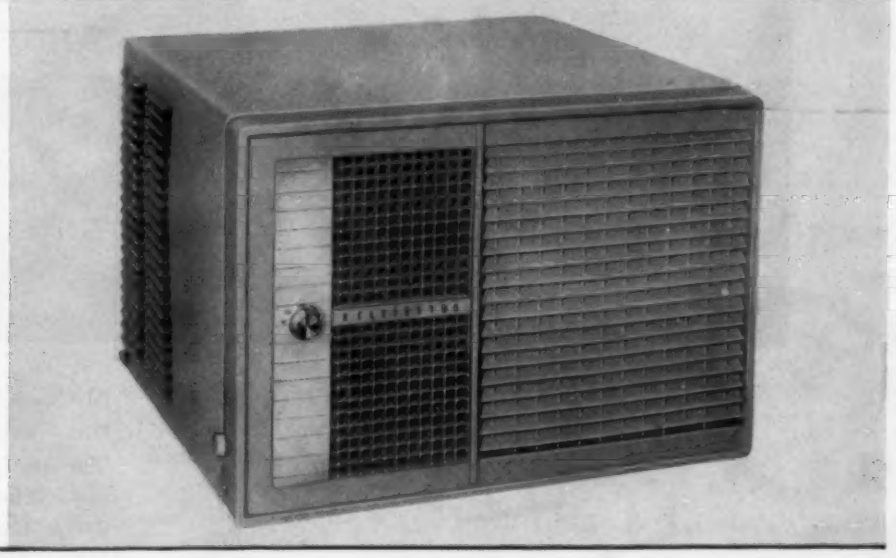
KELVINATOR DELUXE 1 H.P.

Priced and Styled for Big Volume

YES, HERE'S THE VALUE THAT WILL BRING THEM IN!

Here is a price leader with terrific appeal. It's a big deluxe 1 H.P. unit priced as low as many so-called "Bargain" ¾ H.P. models. Feature it in your window, on your floor, in your advertising. It is an easy step-up from this to your top feature models with a world of extra profit opportunity.

BIG COOLING CAPACITY AT A LOW, LOW PRICE



ALSO—CUSTOM MODELS FOR CASEMENT WINDOWS—POWERFUL NEW 2 H.P. MODELS FOR LARGE HOMES, OFFICES, STORES AND SMALL SHOPS!

GOOD BUSINESS FOR YOU!

Inside Dope

By GEORGE F. TAUBENECK

(Concluded from Page 1, Col. 1)

largely *because* the salesman puts his customers and *their interests* FIRST in his life.

And, in the case of baseball families, they enjoy a dandy month in Florida together every year.

With that introduction, let's review more yarns about baseball players—most of whom become salesmen after they "retire," and in off-season months.

Time Tells on Anyone

At a banquet Lefty O'Doul agreed with practically everybody that Ty Cobb was the greatest batter of all time.

"What do you think he'd hit now?" O'Doul was queried.

"Oh, I'd say about .240."

"Wha-a-at? Why he hit over .400 with the dead ball."

"Uh-huh. But he's around 70 years old now."

Following letter and "Editor's Note" appeared recently in *The Sporting News:*

"Would it be possible to use a different picture of my old friend Freddie Hutchinson in your wonderful paper? Every time I see it I'm scared that he got hit with a truck. It looks worse than Jimmy Dykes did when he got up in the morning." —BING MILLER.

EDITOR'S NOTE: Bing Miller played in the outfield with the Senators, Athletics, Browns, and Red Sox and also served as a coach of the Tigers, White Sox, Red Sox, and Athletics. He and Jimmie Dykes were teammates for 20 years.

Training Ground

Three members of Detroit's 1940 American League champions are 1957 major league managers.

They are Birdie Tebbets with Cincinnati, Fred Hutchinson with St. Louis, and Mike Higgins with Boston.

Fast-Change Artists

Venerable Connie Mack used to hold court from a stiff-backed chair in the lobby of Detroit's Fort Shelby hotel when his Athletics sojourned in the Motor City. An evening of a long-gone year he was telling us about the early days of spring training in the South.

"We came into a North Carolina hotel for dinner," he mused. "At that time tipping was illegal down there. Local fella tossed a silver dollar onto the center of our table.

"Did we get service? You're darned tootin'! Double helpings of fried chicken, all the trimmings we could eat, and hovered-over attention.

"Know what that phony tipper did? After we wiped our chins he picked up the silver cartwheel and left."

"Yeah," reminisced Roy Campanella, "that Musial is a real decent fellow.

"When he arrived at the plate he asked me how my family was, how I liked my new home. . . .

"While I'm telling him I look up and there he is on third base."

Although Cobb had a lifetime batting average of .367 (try and beat it!) he slipped a trifle as an old man. At the age of 41 he hit .339; at 42 his average was .357; and at 43, 10 years after most players are through, he whacked out .323 for Connie Mack.

In that last year he slumped for a couple of weeks. Sly old Connie, hoping to psychologic him out of it, did—by attempting to remove him for a pinch-hitter.

"Nobody bats for Cobb," Ty red-necked.

And then he socked a home run seconds later.

Random Pilferings

"I never watch pop flies going up, especially the high ones. All they do is make you dizzy.

"It's enough to watch them when they start coming down. They always do, of course. No batter ever left one up there," averred Roy Campanella.

"I always enjoyed baseball. Not just the money, but the amount," Hank Greenberg was overheard in New York.

"He would have been the greatest pitcher in the world if the plate were high and outside," Chuck Dressen characterized Rex Barney.

The Dodgers enjoyed a 13-run inning against the Reds.

"They made one mistake. They didn't play their outfielders high enough," opined 'Preacher' Roe.

Succinct description (by Ken Boyer) of Wilmer "Vinegar Bend" Mizell's pitching style:

"He shows you his big glove, his big rear, and then the umpire tells you that it was a strike."

How Odd Can You Get?

Seated at a table in Toots Shor's New York sportseaterie were scribes Lyall Smith (Detroit), Red Smith (New York), Harry Jones (Cleveland), and Bob Addie (Washington).

Up came Bobo Newsome, then pitching for Washington. Addie arose.

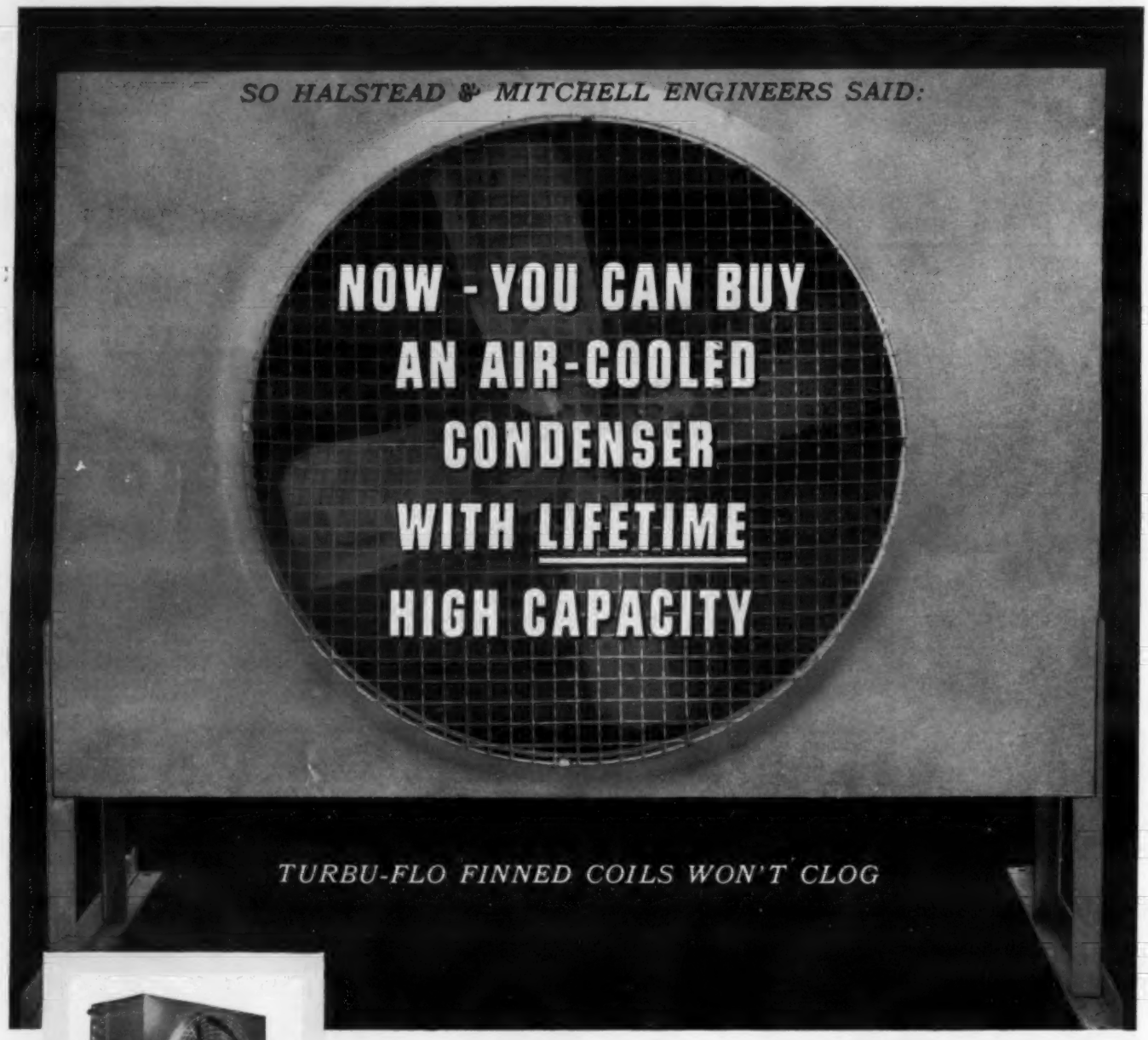
"Bobo, this is Mr. Smith, Mr. Smith, and Mr. Jones," he introduced.

"Huh," huhed Bobo, "won't give their right names, huh?"

Apparently any man stuck with the name of Smith automatically acquires a distinctive nickname somewhere along the line.

Among the Smiths who've played in the major leagues leagues were:

Bull Smith, Irish Smith, Germany Smith, Broadway Smith, Pacer Smith, Popboy Smith, Pap Smith, Oil Smith, Klondike Smith, Columbia Smith, Phenomenal Smith, Stub Smith, Fuzzy Smith, Nig Smith, and Porker Smith.



Here is the industry's finest air-cooled condenser using the exclusive non-clog "Turbu-Flo" finned coil. In this most efficient Halstead & Mitchell design, wide fin spacing prevents the coil clogging with air-borne dirt and other particles which cause a quick loss in condenser capacity. Thus, Halstead & Mitchell's high condenser capacity is built-in, for lifetime operation.

As a best starting point, Halstead & Mitchell uses a generously big coil, with fins spaced 6 to the inch. This means a low pressure drop, which in turn means high operating efficiency. The "Turbu-Flo" fin itself contributes to an extra-measure of heat transfer, providing a marked turbulence of air flow over the finned surface. This results in increased heat transfer due to lowered air film resistance. Thus, there's a generous reserve of capacity in these Halstead & Mitchell Air-Cooled Condensers—capacity which will stay high for the life of the unit.

The exceptionally rugged construction, the manifolding for easy multi-circuiting, and the right price make Halstead & Mitchell air-cooled condensers preferred by contractors everywhere. More details are yours for the asking—write for free Condenser Bulletin. *Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.*

AT LEADING WHOLESALERS EVERYWHERE

Halstead & Mitchell

AIRO stands for
Speedy, dependable, world-wide service.
Air Conditioning and Refrigeration parts, equipment, supplies.
Write for Wholesale Catalog No. 57
AIRO SUPPLY CO.
2732 N. Ashland Ave., Chicago 14, Ill.

For more information about products advertised on this page use Information Center, page 24.

AMCA Reports 2-Mo. Orders Ahead of '56 Period by 18%

DETROIT—Orders for new commercial and industrial heating, ventilating, and air conditioning equipment for the first two months of this year ran 18% ahead of new orders during the same period last year among producers who are members of the Air Moving and Conditioning Association.

Total shipments for the same period were up 17% over a year ago, AMCA reports. Leading in sales gains was the "centrifugal fan" group, which reported 40% more orders during January and February, 1957, than in the same two months a year ago. With shipments dropping behind new orders, this group also reported a net increase in its backlog of unfilled orders.

Second largest gain was reported to AMCA by producers of central station air conditioning units. This group reported both sales and shipments as over 25% ahead of the same period in 1956.

Power roof ventilator producers reported a slight increase in both shipments and orders over 1956.

Hoyt To Head Carrier's Long Range Economic Planning Activities

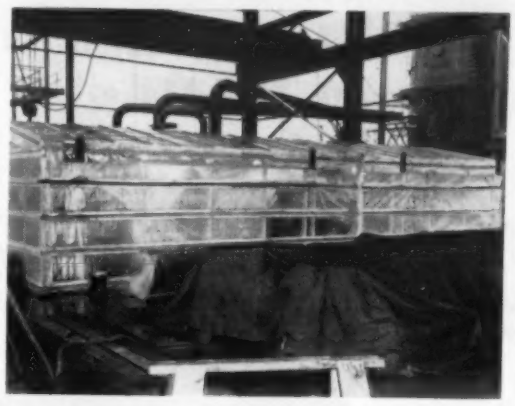
SYRACUSE, N. Y.—The importance of long-range economic planning in modern industrial operations was pointed up by Cloud Wampler, chairman of the board, who announced the creation of a new executive position at Carrier Corp. in this area of activity.

Fred F. Hoyt, vice president and treasurer, who also has been chief financial officer, leaves the Financial Div. to be in charge of this function as vice president. He also will continue to handle certain financial responsibilities, including stockholder and investment group relations.

Melvin C. Holm, vice president, who has been comptroller, is designated as chief financial officer of the corporation. He also succeeds Hoyt as treasurer. Hoyt and Holm will report directly to the chairman of the board.

Leon C. Hutton, formerly executive assistant to the comptroller, becomes comptroller.

'Tough Film' Protects Machinery from Corrosive Sea Air



TO PROTECT machinery being assembled in the open from corrosive sea air in its new refinery, Tidewater Coil Co. has constructed an inexpensive type of translucent all-weather shelter with film made of Bakelite polyethylene. Tacked to knockdown wood frames, the tough film withstands rain, snow, and winter winds and is inert to most chemicals.

Rockwell Cooling--

(Concluded from Page 1, Col. 3)

vious improvement in working conditions — and an estimated 10% greater productivity from these personnel owing to absence of such warm weather time losers as heat enervation, goggle-fogging, and trips to the water fountain. Also better "human relations" in hot weather.

3. Reduction of absenteeism from colds and other health complaints.

4. Increase in building longevity—owing to reduced expansion and contraction of walls and other wear and tear caused by lack of control of temperature and humidity.

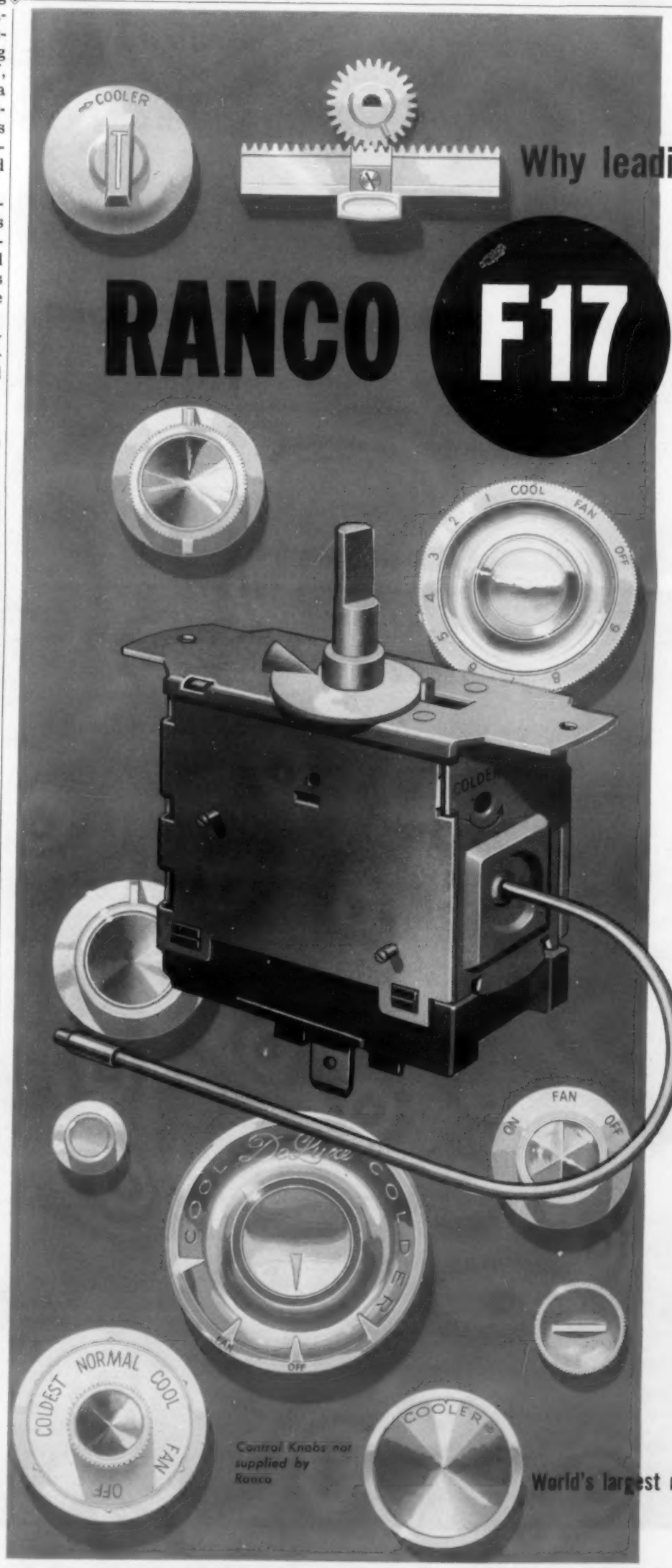
5. Inventory and equipment cost savings made possible by elimination of rusting caused by excessive humidity.

6. Some reduction of initial building costs owing to elimination of the need for windows —along with additional operational advantages and cost savings made possible by windowless construction.

These last include (a) an estimated 5 to 10% more usable floor space as a result of the elimination of any need for aisles next to windows (not to mention additional usable wall space), (b) better-engineered lighting system not dependent on outside lighting, (c) elimination of maintenance, cleaning, painting costs for windows, (d) increased safety from better lighting and removal of diversions outside windows.

"As a result of these findings at our Sulphur Springs, Texas, plant built in 1952," Stuckeman said, "we have since incorporated gas air conditioning in our new plants at Russellville, Ky.; Kearney, Neb.; Porterville, Calif.; and new additions at Tupelo, Miss. and DuBois, Pa."

Most of these plants employ the Carrier gas absorption system, he added.



Why leading air conditioning manufacturers choose the

RANCO F17 CONTROL

Versatile, compact F17 Control operates fan and compressor with single dial knob

There are sound reasons why so many leading manufacturers of window air conditioning equipment have adopted the new Ranco F17 Control—and why you should, too. The F17's compact size and carefully-engineered operational features make it easily adaptable to your own equipment line. And its quality construction makes it one of the industry's most dependable performers.

The temperature-operated F17 features two single pole, single throw switches in one case, both operated by one knob. As knob is rotated from "off," the first position turns on the one-speed integral fan switch and the compressor operates through the second switch in subsequent dial positions.

F17 features provide extra versatility

- Up to 25° dial range from cold to warm.
- Temperature power element is either vapor-pressure or cross ambient filled.
- Minimum 4° differential with vapor-pressure element; 4½° differential with cross-ambient element.
- Screw or quick-connect terminals.
- Dummy terminal for three connections may be added to insulator.
- Stainless steel case and mounting bracket.
- A.C. electrical rating (rating added for dummy terminal).

  Using terminals 1 and 3 for compressor: 115 and 230 volts, 16 amps., full load; 78 amps., locked rotor.

  Using terminals 2 and 3 for fan: 115 volts, 10 amps., full load; 60 amps., locked rotor. 230 volts, 5 amps., full load; 30 amps., locked rotor.

  Dummy terminal may be opposite polarity: 115 volts, 26 amps., full load. 230 volts, 21 amps., full load.

For detailed information on how easily the Ranco F17 adapts to your air conditioning equipment, write Ranco Inc., Columbus 1, Ohio.

Ranco® Inc.
COLUMBUS 1, OHIO

World's largest manufacturer of refrigeration controls

Selling for Profit—*(In Residential Air Conditioning)*

How To 'Merchandise' Residential Air Conditioning; Selling the Products 'That Make Life Worth Living'

By Frank Klein

This series of articles is for those who seek to know the basic "appeals" and principles in selling residential air conditioning. This is the seventh article in the series which began March 18.

Frank Klein has been associated with the air conditioning and refrigeration industry for over 20 years. He has held executive sales positions with a number of air conditioning manufacturers. At present he is a partner in Heidenreich, Klein & Associates of Dallas, marketing specialist.

If I should meet any of you who are reading these articles, and ask you what business you were in, one hundred to one you would answer:

"I'm in the air conditioning business; I sell air conditioning products."

Suppose I should tell you that such an answer is far from right, would you believe me? Certainly not, you would take issue with me, for if you actually KNEW the right answer to my question, much of what I have written up to now would be superfluous.

We don't sell "Air Conditioning Products" gentlemen, we are in the business of selling "THE EFFECTS" of air conditioning. While we deal with the tangible as an intermediary, it is the effect of the tangible that produces the results we sell. Thus we are actually in the business of selling "effect" rather than a tangible. You are selling the BENEFITS which your product or products will produce.

Once you learn to sell BENEFITS and EFFECTS, you start to be a successful salesman. In essence, selling benefits and effects requires romance in your sales story. Romance in sales stories shapes the success of any "merchandising" approach; and by the way learn to segregate that word "merchandising" from the word "selling" which many of us use as a generality.

None of us will survive in the field of residential selling unless we learn to "merchandise" our product through effective selling of its effects and benefits. The reason for this is obvious. The homeowner buys better than 90% of the possessions he has in a home as a result of merchandising approaches which have been directed at extolling the benefits they have for him. He will accept no lesser approach from you and me.

Your theme for selling in the residential cooling field must be built around—SELLING THE PRODUCTS THAT MAKE LIFE WORTH LIVING. You must get this theme across to your prospect, and in order to get it over successfully you will have to learn the technique of "romance sales."

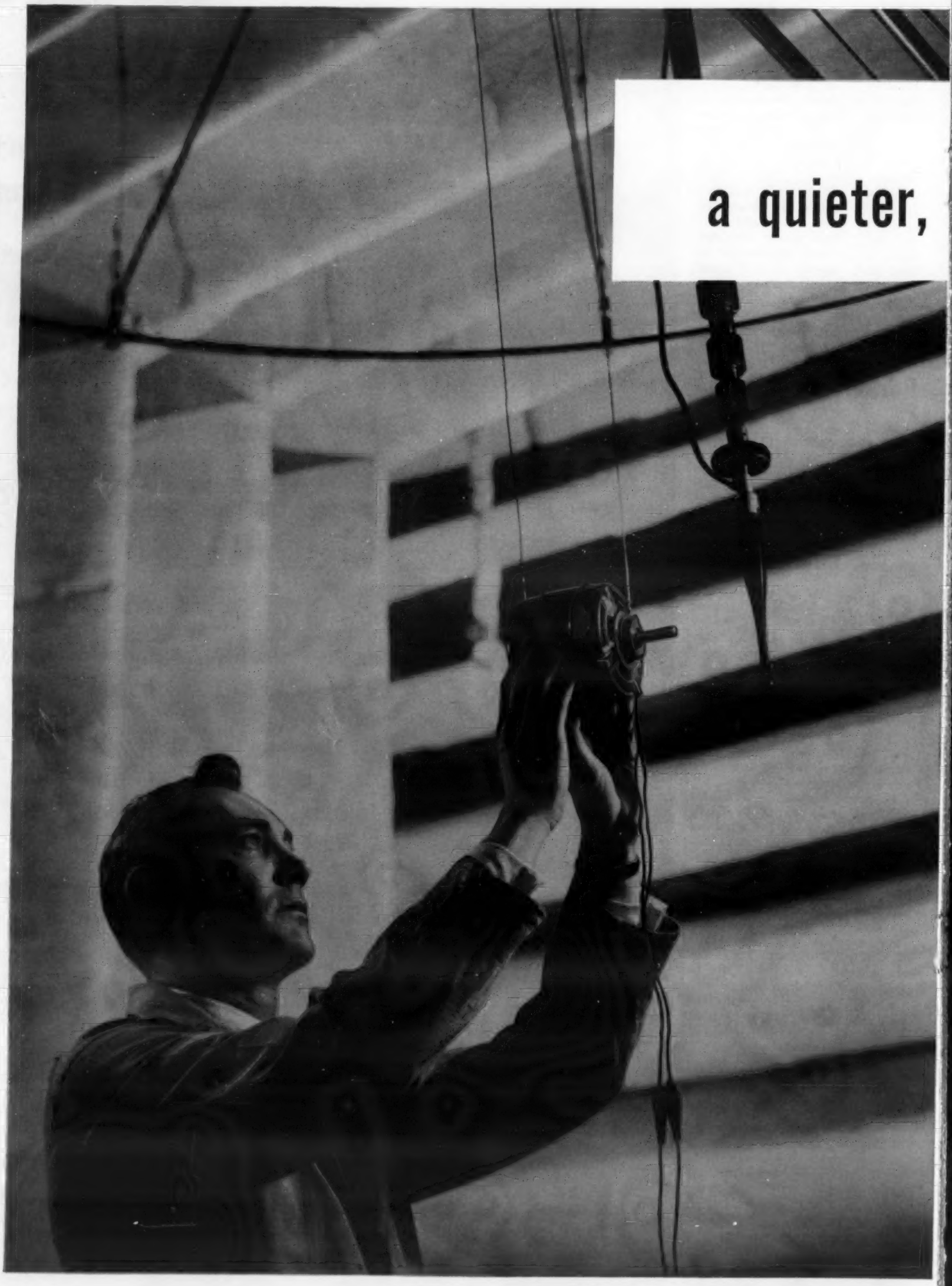
In the very first instalment of this series, under the subject of "What Hot Weather Does To Us," I gave you a typical example of romance in a sales approach. This "romance" I speak of is a part of the "Imaginative Selling" that these articles have been underscoring.

If you want a definition, then the best I can think of is that: "Romance sales are made through employing imagination in sales, and are fact-supported approaches built with words the prospect can understand and are appeals to, and based mainly on, emotional reaction."

Consider this other remaining fact. Isn't it actually true that air conditioning products produce effects that really do make life worth living—when weather conditions would otherwise be unbearable?

"Selling Products That Make Life Worth Living," is not a gimmick, not a play on words thought up by some high-pressure, ivory tower advertising

(Continued on next page)



MINERALLAC
HEAVY DUTY & MEDIUM
JIFFY
CLIPS

Also available without mounting hole for use with gun.

Made of heavier materials! Has exclusive inverted rib, that provides more strength at the bend of clip . . . and, of course, adds the benefits of famous "Snap On" feature! Send for literature.

MINERALLAC ELECTRIC COMPANY
25 N. PEORIA ST. • CHICAGO 7, ILL.

For more information about products advertised on this page use Information Center, page 24.

Selling Residential Cooling--

(Continued from preceding page)

group or individual, it is a statement of fact, romantically put into words that are familiar, which has the power to stir and arouse an emotional reaction.

Those of us who would succeed in residential cooling sales to the homeowner field are faced with something we think we have been doing and are capable of doing, but obviously are not; and that is LEARNING TO PRACTICE SALESMANSHIP AS A PROFESSION.

Perhaps I should define this term "Professional Salesmanship." Possibly some may think it implies an individual with a glib tongue, a fast way with a buck, a cross between a shell-game artist on the midway and a road-show medicine spieler.

But I would define a Professional Salesman as one who:

1. Is in the business of advising, instructing, and serving his prospects and customers.
2. Advises, instructs, and serves his customers and prospects in such a way that they become enthusiastic users of his products and services. This generally toward the end that they will refer him and his products to others having a similar need.
3. Is in the business of advising and instructing his customers and prospects in the uses, Feature Aspects, and benefits to be derived from his services, his products, and their effects, that they will receive lasting benefits, that the company he works for will benefit, that he himself will in turn benefit.

To those who will sell on the basis of these principles, the supply of prospects is inexhaustible. Those of us who wish to be a success in selling, and in the selling of air conditioning products based on the beneficial effects they produce, must practice professional salesmanship.

Learn to spin fact-supported stories with an emotional appeal in a romantic and appealing manner, and do this through well planned sales stories that will strike the emotional and personal field that is represented by the consumer market.

Every human being is a prospect for "Comfort," because everyone likes to be comfortable. When you paint a romantic and an appealing picture of that comfort, you stir, bubble, and boil the prospect's emotions; the degree depends upon your skill in romancing the sales appeal. With products created specifically for increasing the comfort of human beings, you truly sell the products that make life worth living.

People WILL buy comfort. It is an undeniable fact that they WILL pay for comfort, for things that "make life worth living."

Human beings buy BENEFITS —not PRICE. Here are a few typical examples:

A. You can buy a common and ordinary kitchen chair for as little as.....$10.00

A comfortable, ordinary lounge chair costs.....$100.00

(YOU CAN SIT IN BOTH— BUT WOULD YOU USE A KITCHEN CHAIR FOR COMFORT?)

B. You can buy an ordinary run-of-the-mill pair of shoes for from $8.00 to $14.00

If you are on your feet much and you are dependent on foot comfort, fitted, arch supported shoes will cost $25

(WHY NOT GET A CHEAP PAIR OF SHOES, THEY WILL "DO" AND PROBABLY RUIN YOUR FEET AND YOUR JOB.)

C. 12 in. and 17-in. TV sets were very good, they showed a picture and they cost between....$225 and $300

21 in. and 24-in. TV sets appeared on the scene and cost, minimum $400

(DID EYE COMFORT HAVE ANYTHING TO DO WITH THIS?)

Nowhere in this world of civilized living, is there controversy concerning the need for human comfort, the desire for human comfort, and the willness to pay for human comfort. People will buy "the things that make life worth living."

If you make your prospect understand the BENEFITS that your product has to offer; if you will make your prospect WANT your product as a result of the benefits it has to offer him, your prospect will BUY your product because it holds a future of comfort that will really make life worth living.

Stop selling your product as a mass of mechanical operation and construction only, and start selling the benefits and effects it will accomplish. Simplify your theme in selling to: "products that make life worth living"; stimulate and arouse curiosity in your prospect with such a theme.

Attract your prospect's attention and get him to thinking in terms of benefits and effects so that he will listen while you explain how these benefits and effects can be his through the purchase and use of your equipment.

(To Be Continued)

GENERAL ELECTRIC ANNOUNCES . . .

more efficient shaded-pole motor

For your customers' satisfaction, General Electric offers you two important advancements in its 5" dia. unit bearing shaded-pole motor design. ***This new General Electric shaded-pole motor has a 40% lower sound level, and is nearly five percentage points more efficient than the previous design.***

In order to put this new motor on the "very quiet" side, General Electric engineers made extensive use of G.E.'s industrial sound laboratory. Here, the new motor design was tested thoroughly—both free-running and mounted-on-products. As a result, General Electric engineers achieved a marked reduction in over-all motor sound level, and improved sound quality by eliminating objectional noise frequency peaks.

LESS NOISE MEANS MORE SALES FOR YOU

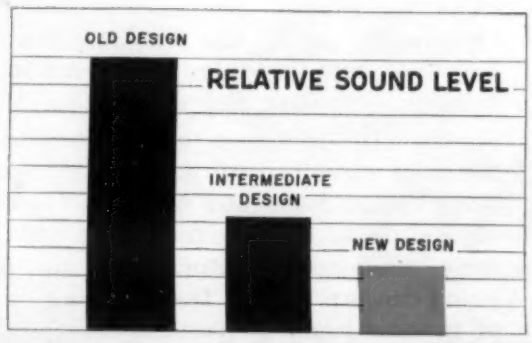
This combination assures you of a *truly quiet* motor for those applications where noisy operation can mean lost sales—for example, in appliances and air-moving devices for homes, hotels, hospitals, etc. The significant increase in shaded-pole motor efficiency was made possible by a new magnetic stator design—completely new to shaded-pole motors.

This new design decreases watts input between 7 and 20% (depending on the motor rating), without a sacrifice in power output.

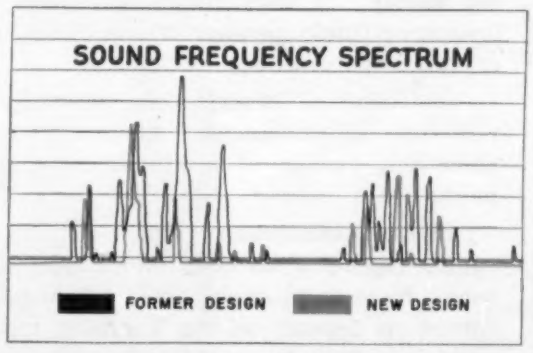
LONGER MOTOR LIFE RESULTS FROM HIGHER EFFICIENCY

Of course, increased efficiency also results in a cooler-running motor—giving you longer bearing life *and* longer over-all motor life.

These two new advances are proof of General Electric's continuing leadership in shaded-pole motor manufacture and design. For further information on the many additional features of the G-E shaded-pole motor line, contact your nearby General Electric Apparatus Sales Office, or write: Section 632-7, General Electric Co., Schenectady 5, N. Y. and ask for bulletin GEA-6134.



Bar graph shows that new shaded-pole motor has a 40% lower sound level than previous design, over 74% lower than old-style design.



Actual sound frequency spectrums show how new design motor eliminates objectionable sound frequency peaks, improves sound quality.

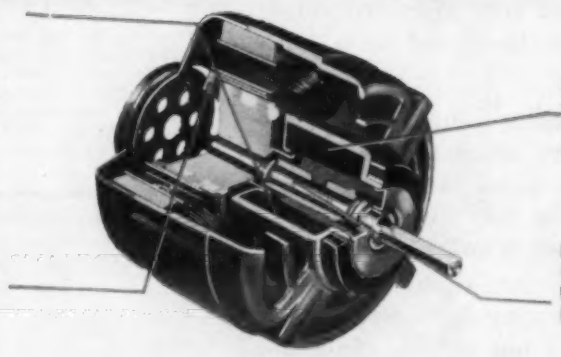
Progress Is Our Most Important Product

GENERAL ELECTRIC

. . . PLUS THESE PROVEN BENEFITS OF G-E UNIT BEARING DESIGN

Bearing housing of integral cast design provides accurate alignment for smooth, quiet operation. Sturdy sleeve bearing handles normal radial and axial thrust loads in any mounting position.

Large capacity sealed oil system is designed for years of dependable service without re-oiling, permits all-angle mounting.



Large die-cast fan integrally cast on rotor assures maximum heat dissipation for longer motor life.

Forced lubrication system provides constant supply of recirculated, cooled, and filtered oil for longer life, quieter operation.

For more information about products advertised on this page use Information Center, page 24.

They'll Do It Every Time

by Jimmy Hatlo

WELL, WINDBERRY··· I SEE YOU'RE BACK FROM YOUR TRIP TO THE NEW MAIN OFFICE··· WHAT'S NEW AT HQ.?
VERY SECRET SERVICE! IT'S BEEN TACKED ON THE BULLETIN BOARD IN THE MAIN OFFICE FOR THE LAST THREE MONTHS···
TO HEAR HIM TELL IT, BIGDOME WON'T EVEN PICK OUT A UNION SUIT WITHOUT CONSULTING WINDY···
REALLY GOT TO KNOW THE OLD MAN THIS TRIP. WITH HIM EVERY MINUTE I WAS THERE-- ONLY YESTERDAY AT HIS CLUB HE SAYS TO ME··"WINDY--THIS IS B-I-G! STRICTLY Q.T.···WE'RE GOIN' AFTER THE FOREIGN MARKET--GONNA SPEND TEN MILLION RETOOLING THE PLANT FOR LEFT-HANDED WIDGETS"···THEN HE NUDGES ME AND SAYS··"WINDY," HE SAYS,"BETWEEN YOU AND I····"
BIGDOME DOESN'T EVEN KNOW THAT BIG WIND IS ON THE PAYROLL--AN' IF HE EVER FINDS OUT, THERE'LL BE A CHANGE IN THE WEATHER·· HA-HA···
SOMETHING'S FISHY···HE WAS PLAYIN' NUDGY WITH BIGDOME IN N.Y., AND BIG-DOME SENT US A TELEGRAM FROM TEQUILA, MEX.
GETTING A FIRST-HAND REPORT OF BIG DOINGS THAT NEVER HAPPENED AT THE HOME OFFICE····
THANX AND A HATLO HAT TIP TO MICHAEL MITCHELL, 228 W. DURAND ST., PHILADELPHIA 19, PENNA.
JIMMY HATLO
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2-26

There's Plenty Wrong With Tax Philosophy --And Eisenhower's Budget

Roosevelt and Truman raised our taxes steeply. And Eisenhower, despite his campaign promises, seems to be in favor of keeping them high "for awhile." The budget he submitted to Congress, in our opinion, is a scandal to the jaybirds.

He may be right, of course.

But we do hope that the "soak-the-rich" attitude toward taxation can be changed. It's hurting little business as well as the big fellows. That goes for the dealers, distributors, contractors, etc., who are subscribers to AIR CONDITIONING & REFRIGERATION NEWS.

One of the many bad results of this *Penalize Success* attitude:

Not enough "venture" capital is available to insure healthy growth of the small business enterprises AIR CONDITIONING & REFRIGERATION NEWS serves.

Continued scarcity of risk money for growing "little business" ultimately will result in industrial stagnation, political anemia, and the Socialist-Communist takeover of our country by default. No kidding: it's that bad!

Upon the growth of business acorns into sturdy oaks the future of our country depends.

Postwar inflation has concealed the plight of small business enterprises and their too-often jittery backers.

Lusty chance-taking, *and enduring growth,* require saved-up or inherited adequate capital at the beginning, plus continuing bolstering through investments by employes and the general public.

Who will supply capital for these growth periods—when tax laws confiscate so much of the possible gains of investors? That is a REAL BIG question.

"Risk money" performs two unique functions for Free Enterprise America.

(1) It finances promising ideas. Most new ventures fall by the wayside while brave enterpreneurs try to sell them to the Public. A fractional few evolve into industries which provide employment opportunities for the many, and supply newly wanted goods and services to everyone. The rest flush out down the drain—in great part because the starters can't afford to keep them going until they're "in the black." Or, equally often, the little fellows can't keep up with the "bigs" in terms of new factory equipment and advertising.

(2) It backstops and underpins the financial structure of established corporations. Bank loans and bonds are easier to obtain after chance-taking stockholders have *cushioned* creditors, and pinioned a going concern against the repeating hazards of general business fluctuations.

Capital for risk-takers comes nowadays from three sources: reinvested corporate earnings; savings of individuals; and "the big money" of institutional investors (life insurance funds, pension trusts, labor union capital aggregations).

Institutional investments normally are put into almost-ancient firms which can show long periods of uninterrupted dividend payments.

Chancey businesses—which require more equity capital than they can supply themselves from excessively taxed earnings—are forced to depend on the gambled input of employes, friends, and (on rare occasions) customers.

Our great United States of America eventually will be the loser from this drying-up process.

Eminent, well-publicized corporations (which can boost and boast long records of dividend payments) have ready access to low-cost capital borrowings. Their stocks are attractive to investors who, dammit, are wary of "growth concerns."

Youngsters in the Business League, on the other hand, must rely upon individual "believers" who trust them and have faith in their Future.

This "class prejudice" inbuilt into our nation's tax structure ultimately disadvantages poor and rich alike. It closes down employment prospects for youths and the over-40's, among other drawbacks.

It's high time a more realistic political and economic philosophy be devised—and sold to the voters of our nation. So-called Little Business doesn't need protection. It just needs a fair chance.

President Eisenhower: What happened to your campaign promises of economy in government and lower taxes?

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'The Conscience of the Industry'

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MISSES MIDGLEY IN HISTORY HIGHLIGHTS

E. I. du Pont de Nemours & Co.
Wilmington, Dela.

Editor:

Your well written and enjoyable article "From Tiny Acorns" in INSIDE DOPE of AIR CONDITIONING & REFRIGERATION NEWS of Feb. 25 covered in good sequence some of the events that took place long before many of the present generation now in the industry.

How true, "From odd and obscure beginnings came that mighty economic force—the refrigeration and air conditioning industry—in the second decade of this country." There was not necessarily screwball behavior, but I agree there may have been muddy times with lots of temperament and impatience displayed. This certainly did have a profound effect on our living standards and national growth and development.

You made mention by name of fifteen or more companies and twenty or more individuals, some of whom are still prominent and their names will always remain so. You also mentioned iceless iceboxes, refrigerators, air conditioners, accessories, float valves, condensers, hermetically-sealed compressors, fans, hundreds of intricate pieces, motors, controls, insulation, heat exchangers, pumps, valves, fittings, etc., etc., etc.

What may have puzzled and amazed many of your readers is how all of those companies, individuals, and devices could have made possible this present refrigeration and air conditioning industry without the development and use of the one and most important item in the whole show—a refrigerant. Without that one previously unmentioned tailor-made item, the rest of the recovery apparatus, controls, heat barriers, storage cabinets, metering devices, and driving force would not serve the intended purpose of retarding the growth of molds, yeast, and bacteria or provide for simultaneous and proper control of temperature

(Concluded on next page)

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OFF THE CHEST

(Concluded from preceding page)

and humidity.

Yes, a very prominent name that should be added to your list is Thomas Midgley, Jr., whose discovery of a new family of refrigerants removed the bottleneck that was handicapping the market expansion of the domestic mechanical refrigerator and has been responsible, in large part, for the development of air conditioning industry as we know it today.

Modesty almost prevents me from becoming commercial, but for fear that there be a misunderstanding as to who Midgley was or what he did, I am forced to say that he was a mechanical engineering-minded chemist and the inventor of the "Freon" fluorinated hydrocarbon refrigerants manufactured by the du Pont Co. Thus, there are three newsworthy and distinguished names for addition to your story.

Our equity in this business of well over three billion dollars last year was very small indeed, but our pride in serving your and our industry is well on the high side. If there is any doubt as to that, just ask any one of the enthusiastic members of our team, for they will display and give you the true facts. "Freon" has become not only absolutely necessary and important to the industry, but has become accepted as a matter of fact; however, it has at least attracted the attention of other chemical manufacturers.

You no doubt will be interested in the enclosed article "Background Information on the History of 'Freon' Refrigerants" or the story of "Freon," so will you please accept it with my compliments.

R. J. THOMPSON

VETERAN INVENTOR LIKES 'FROM TINY ACORN'

Dallas, Texas

Editor:

I want to tell you how very much I enjoyed your "Inside Dope" analysis of domestic mechanical refrigeration and air conditioning as told in the Feb. 25 issue of AIR CONDITIONING & REFRIGERATION NEWS — titled, "From Tiny Acorn."

Records in the patent office will show that I was also in there pitching in the early thirties while living in Chicago.

TOM CARRAWAY

WHAT . . WHEN . . WHERE — *A Guide to Coming Events of Interest*

National Warm Air Heating & Air Conditioning Association (NWAHACA) Committee Meetings, Technical Conference
April 29-May 2, Hotel Cleveland, Cleveland.

Western Air Conditioning, Heating, Ventilating, and Refrigeration Exhibit and Conference
May 4-8, Shrine Exposition Hall, Los Angeles.

Air-Conditioning & Refrigeration Institute (ARI) Board Meeting and Annual Meeting
May 5-8, The Homestead, Hot Springs, Va.

National Restaurant Association (NRA) Convention and Exposition
May 6-10, Navy Pier, Chicago.

American Society of Heating & Air-Conditioning Engineers (ASHAE) Regional Meetings:

May 2-4, Region 5, New Orleans

May 6-7, Region 4, Los Angeles

May 10, Region 6, Tulsa

May 13, Region 3, Kansas City

Mechanical Contractors Association of America (MCAA) Annual Meeting
May 7-10, Hotel Fontainebleau, Miami Beach, Fla.

American Society of Refrigerating Engineers (ASRE) Annual Meeting
June 2-5, Hotel Fontainebleau, Miami Beach, Fla.

National Warm Air Heating & Air Conditioning Association (NWAHACA) Summer Convention
June 5-7, Fairmont hotel, San Francisco.

Summer Home Furnishings Market
June 17-28, American Furniture Mart, Merchandise Mart, Chicago.

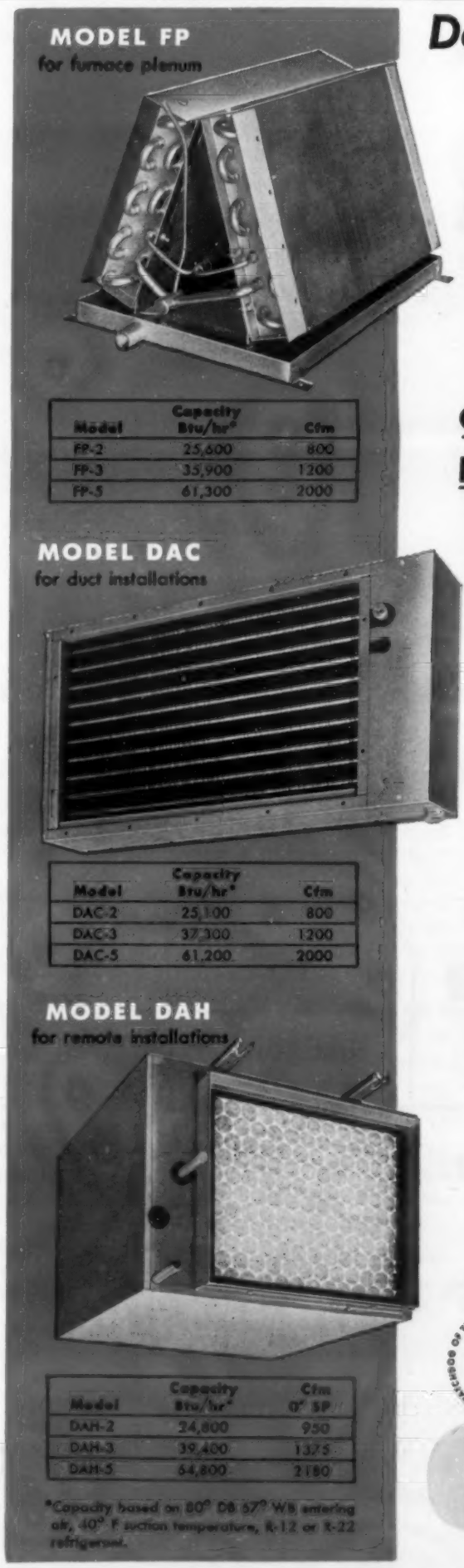
American Society of Heating & Air Conditioning Engineers (ASHAE) Semi-Annual Meeting
June 24-26, Manoir Richelieu, Murray Bay, Quebec, Canada

Wm. Morlok, Fountain Pioneer, Dies

PHILADELPHIA — William Morlok, 88, soda fountain industry pioneer, died recently in Lankenau hospital.

He invented several types of syrup pumps and held patents on several other soda fountain dispensing devices which he made in his factory here and in Audubon, N. J.

He retired from that business in 1940.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FP-3 | 35,900 | 1200
FP-5 | 61,300 | 2000
MODEL DAC
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Model | Capacity Btu/hr* | Cfm
DAC-2 | 25,100 | 800
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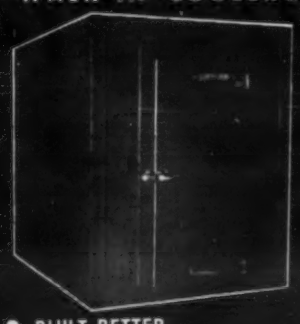

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Defense Dept. Uses 'Climate Control' 'Solely To Improve Effectiveness of Total Defense Effort' -- Bryant

All purchases of air conditioning by the Federal government are made either by the Department of Defense, which takes care of its own widespread properties and varied needs, or the General Services Administration, which handles all the rest. The views of these two agencies, therefore, are mighty important to the air conditioning industry.

The thinking of these agencies was pretty well outlined at the recent government-industry symposium on air conditioning held in Washington, D. C., under the co-sponsorship of the Department of Commerce and industry groups by three officials of these agencies. Essential parts of their talks appear on this and following pages and in a future issue.

In this article Floyd S. Bryant speaks for the Defense Dept.

WASHINGTON, D. C.—Some of the factors which the Department of Defense must consider in deciding whether or not to air conditioning facilities and quarters were outlined at the recently government-industry symposium on air conditioning here by Floyd S. Bryant, assistant secretary of defense for properties and installations.

Pointing out that while air conditioning is a military necessity in many Department of Defense functions, such as nuclear submarines, supersonic aircraft, large Naval vessels, and underground air defense command centers, and that it seems desirable for year-round training classrooms and many living quarters, Bryant emphasized that budget limitations prevent an across-the-board application of air conditioning to all facilities.

"The purpose of climate control in the Department of Defense," he said, "is solely to improve the effectiveness of the total defense effort. Climate control will not increase our number of customers or the number of those who seek our services. I might add also that we cannot take a tax credit for capital improvements nor can we deduct operating expenses.

'Interested In Year-Round Control'

"Because of our over-all responsibility, the Defense department is properly interested in the complete year-round control of the temperature, humidity, and quality of the air within structures occupied by military and civilian personnel of the armed forces.

"Certainly we find complete acceptance of the principle of controlling at least the temperature within structures during colder months. We find equal acceptance of the practice of installing central heating plants and have come to expect what we choose to call 'climate control' in all modern office buildings, hotels, theaters, and similar buildings. And in recent years we have seen a marked trend toward climate control during the summer months.

"In many parts of the country, summer climate control has become virtually a necessity in business and office installations and in many industries," Bryant observed.

"The Department of Defense, in line with this trend, is also making extensive use of summer climate control. We estimate that the value of cooling plants and systems installed in the three military departments is not less than $200 million. The annual maintenance costs to support these systems is approximately $10 million.

"As in civilian applications, much of our summer climate control is required to support functions which could not operate effectively without this modern aid. Such activities as precision machine operations, optical shops, research laboratories, underground air defense command centers, and various communication facilities must have cool, dehumidified, filtered air to carry on their functions," he said.

Hospitals Cooled In Warmer Sections

"Moreover, hospitals and related medical or dental facilities of the armed forces in warmer sections of the country contain substantial areas of climate controlled space. While not all of these facilities are completely air conditioned, in many of our hospitals even general ward space is equipped with year-round climate control.

"In addition to the medical requirement for cooling hospitals and clinics, we have acknowledged the humanitarian aspect and morale of the sick and convalescent. In fact, we have reason to believe that in the modern air conditioning of medical facilities the Department of Defense may be slightly ahead of similar civilian facilities.

"In the field of training, too, the Department of Defense may be generally ahead of civilian counterparts in providing means of climate control. Civilian schools and colleges operate on a very reduced basis, if at all, during hot weather, but those in the Department of Defense continue the year around.

'Conditioning Is Instructional Aid'

"We believe adequate control of the atmosphere within training structures is an excellent aid to the instructional process, for a number of reasons. For instance, some mechanical and electronic training aids produce enough heat to require cooling even in winter.

"Then, too, we frequently must accommodate abnormal training loads, with the result that classrooms and other training facilities are often overcrowded. Climate control in these cases can be very helpful in maintaining alert responsive students," Bryant declared.

"Since training costs in the

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SUPER 352
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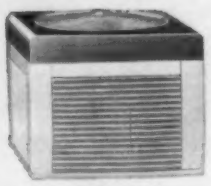

BUDGET 301
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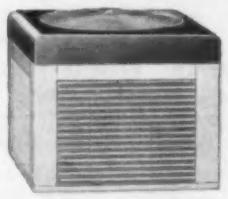

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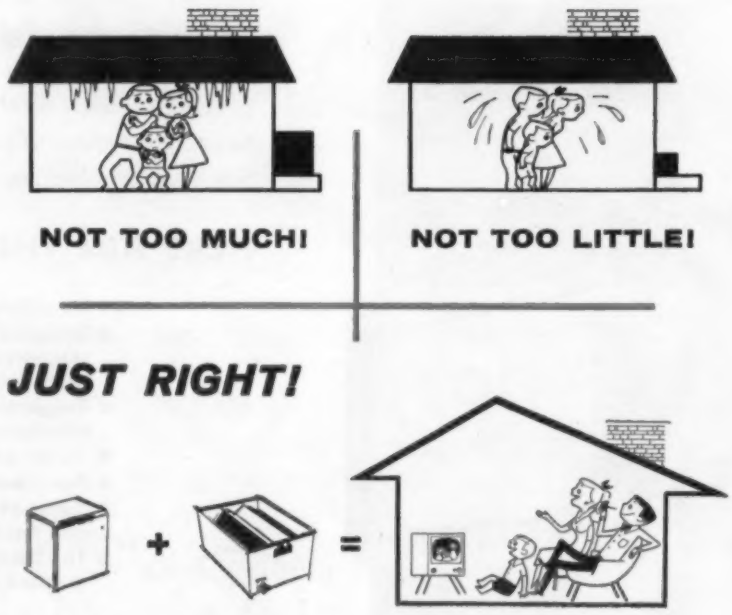

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For more information about products advertised on this page use Information Center, page 24.

Defense Dept. Conditioning--

(Continued from preceding page)

military departments can be relatively high, it is just good common sense to do everything we can to assure maximum efficiency from such programs. Accordingly, training facilities rank high on our priority list for climate control, but I must acknowledge that a substantial majority of these facilities still don't have it.

Submarine Cooled

"Under the heading of military necessity, you might also include the work the Department of Defense is doing in the field of air habitability in submarines and surface ships and in high speed aircraft. Obviously, we have some rather unusual problems in this kind of equipment.

"As you know, the *Nautilus,* our first nuclear powered submarine, is capable of cruising for periods of more than a week without surfacing. To do that it needs both climate control within the hull as well as equipment to remove carbon dioxide and other harmful gases from the air within the submarine and to recharge it with oxygen.

"In our high speed aircraft, as we approach the 'thermal thicket,' where friction may generate aircraft skin temperatures ranging into four figures Fahrenheit, we must have an effective and lightweight means of keeping cockpit temperatures within habitable limits.

"Thanks to the industries some of you represent, the armed forces are finding workable solutions to these and many other air habitability problems, but there is still room for improvement," Bryant said.

"Unfortunately, the same solutions cannot be applied to both ships and aircraft. For example, a number of companies are working on very compact and lightweight equipment for high speed aircraft which takes hot air out of the jet engine itself and through a number of steps — principally compression through rotors operating as high as 100,000 r.p.m.—produces air temperatures of zero or below.

"We are always seeking to reduce weight and bulk of auxiliary equipment in ships and submarines, as in aircraft. But the high speed compressors which make possible miniaturized equipment in aircraft produce noise levels that are totally unacceptable in ships.

"The banshee wail of a 100,000 r.p.m. compressor may make no difference to the pilot flying at supersonic speed, but it would present an impossible noise condition within a submarine hull—not to mention the leads it would provide to an enemy's detection devices," Bryant commented.

Wants To Reduce Noise, Vibration Of Cooling Units

"The Navy is interested in ways to reduce noise and vibration as well as space and weight in all its climate control systems. Navy specifications now call for air conditioning, as a matter of military necessity, in all ships from destroyer escort size on up.

"Our equipment is not as elaborate as that on commercial liners, for we are not disturbed by variations of a few degrees from one compartment to another. But it is obviously necessary, particularly as we are incorporating more heat-producing equipment all the time, notably in electronic devices.

"Air conditioning has so far proved completely infeasible in the biggest heat-producing areas aboard ship—the engine rooms—where we continue to rely on circulation of outside air to keep temperatures within habitable limits. But we will need a solution even to that problem before long, for we recognize the need to be able to seal surface vessels entirely for limited periods as protection against atomic, bacteriological, or chemical attack," he disclosed.

'Defense Dept. Needs Cooling Industry's Aid'

"These matters may be somewhat afield from our discussions here, but I think they are pertinent for at least two reasons: first, because the Department of Defense needs your help in developing solutions to the problems of climate control in combat equipment; second, because solutions of these problems may prove adaptable for other military requirements and civilian use as well, to the benefit of the industry and the general public," Bryant told the symposium.

"Business and industry have found climate control in offices and research laboratories an aid in promoting employe morale, reducing absenteeism and employe turnover, and increasing work output. The Department of Defense has reached much the same conclusions. Still, we must consider a number of factors which may not apply to civilian establishments when they decide to install complete climate control.

'Climate Control Ups Efficiency'

"The use of climate control in areas involving equipment, processing, or other special functions is based on established engineering and other known facts. We have seen rather firm evidence, too, that climate and humidity control may increase employe efficiency in clerical duties and in similar jobs with a measurable output. For example, we can make a study of the work output in such an office before and after the installation of climate control equipment, and figure out on a pure cost basis whether the equipment paid for itself or not.

"But while we may assume that this example would carry over into other work areas, we have not yet found a way to prove that climate control enhances brain power. Does the executive, the engineer, or the scientist think better when the climate is more comfortable? If so, how much better? If we had answers to these questions, the use of climate control might be reduced to simple economics," Bryant suggested.

"Although we do not yet have enough answers to that type of question, the Department of Defense last August established an over-all policy to guide the armed forces in planning climate control systems for new structures. Without going into detail on its provisions, we believe it is reasonable in relation to national and local trends.

"It allows summer conditioning in geographical areas where it had not previously been authorized by the military departments. It represents the best possible balance we could achieve among such factors as requirements, initial and long

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'Climate Control' In Defense Dept.--

(Concluded from preceding page)

range costs, and budgetary limitations.

"When we try to fit military housing into our policy, though, we run into some rather formidable problems. Keeping in mind that we authorize climate control only when it will improve our military effectiveness, it is clear that housing would normally be accorded a low priority," he explained.

"I suppose it could be argued that our personnel cannot work as efficiently if they have spent and uncomfortable night in hot weather, but when you have only so much money to devote to climate control I am sure almost everyone would agree that it is more reasonable to apply our resources on facilities which contribute directly to our defense programs.

"So far our policy is clear enough, but it gets a little more complex in the case of Title VIII, or Capehart, housing programs. Capehart housing projects, as you know, are privately financed and self-liquidating.

"There are three factors which do affect government funding.

"First, inclusion of year-round climate control increases the amount of the mortgage, and the government underwrites mortgage costs. Secondly, the costs of maintaining summer climate control equipment come out of government funds. Third, and perhaps most important, is the impact of air conditioned Capehart housing upon other government-furnished housing without this feature.

"Since the family in the government-furnished house without climate control gives up the same rental allowance as the one in the Capehart house, we are discriminating against the former unless we provide air conditioning for their quarters too. The single officer living in the bachelor officers' quarters and the enlisted man in the barracks can, and no doubt would, voice the same complaint," Bryant warned.

'Don't Have Funds To Cool Quarters'

"Therefore, we feel that any consideration of year-round climate control for Capehart quarters must also include consideration of this feature for all personnel quarters. Frankly, the military budget for this year, and the years immediately ahead, cannot provide the funds we would need to install climate control in existing quarters.

"We are not so hard-nosed about this, however, that we will not authorize year-round climate control in Capehart housing when it is shown to be economically feasible. We have made exceptions on projects in areas with low utility rates and low equipment bids. We are also striving to provide conditioning equipment in existing quarters in regions where summer weather can be particularly uncomfortable.

"At this time, however, it appears that we cannot hope to extend climate control to personnel quarters on a complete basis for a number of years. Instead, we will continue to stretch available funds just as far as they will go and do the best we can to fill priority requirements.

"To return to the same subject as it pertains to military structures, our over-all policy has worked to rather good effect in justifying climate control to the Bureau of the Budget and the Congress in those structures requested in our normal programming cycle. If you are familiar with the armed forces budget system, you know that we must program at least two years ahead of actual funding.

"Our office receives a steady stream of requests from the military departments for approval of funds to modify existing buildings for new ones. Climate control is usually a requirement, in fact, it is often the prime factor which makes the conversion feasible.

"The Congress authorizes us to divert maintenance and operations funds for this purpose, provided the project is urgently required in the interest of national defense. But to do so means that the maintenance and operations programs will suffer correspondingly.

"We also need to determine such facts as whether the building has a useful life consistent with the amount being invested and whether the cost of climate control will affect the number and size of necessary facilities we can provide.

Need To Determine Useful Life of Bldg.

"We may have to choose between having five usable buildings with climate control or six without it. Perhaps without climate control the buildings will be only 60% effective, but the remaining conversion cost will be so low that we can abandon the space after a couple of years in favor of a new permanent building of 100% effectiveness," Bryant explained.

"Another factor affecting our adoption of climate control is the increased cost of maintenance and its impact on our maintenance and operations budget. The construction cost is a one-time problem, but maintenance is an annual expense. Naturally, then, in considering the installation cost we look at estimated over-all costs for the life of the equipment and the building.

"In analyzing the unit costs of various climate control systems proposed by consulting engineers and architects, we have discovered unusual variations.

"This leads me to believe that more emphasis is necessary on placing in the hands of architects and consulting engineers information on the substantial gains made in the art of climate control in the past dozen years," he suggested.

"It should be apparent that substantial benefits would result if climate control systems are designed as an integral part of new structures, rather than as an afterthought. Furthermore, speaking for the Department of Defense, we are interested in good, but not elaborate, design in all aspects of our structures.

"The industry could be helpful in pointing out varities of integrated climate control systems so that we would not be faced with the alternative of accepting expensive and unnecessary design features or none at all.

"We have found, for instance, that temperature, humidity, and dust tolerances are frequently more restrictive than necessary for our requirements. We have also seen evidence that some architects and design consultants are not well informed on such points as proper siting, glazing, fenestration, and insulation."

He wouldn't be guilty of leaving fingerprints!

The hands that go into these goatskin gloves belong to a skilled worker in General Electric's new Tyler, Texas plant where whole-house air conditioning equipment is built.

The reason for the goatskin gloves? Even the barely perceptible perspiration that forms on human fingers would have an adverse effect on the compressors which are the heart of General Electric central system air conditioning. In any necessary handling before the compressor is factory-sealed for protection, goatskin gloves are worn.

This is an extra step we take—one of the many ways we safeguard the quality of our products. And this quality control, standard practice at Tyler, Texas, is far-reaching in its effects. Wherever you may install General Electric Home Heating and Cooling systems it is your assurance of the kind of user satisfaction that means customer good will and continued profits. General Electric Home Heating and Cooling Dept., Tyler, Texas.

Progress Is Our Most Important Product

GENERAL ELECTRIC

For more information about products advertised on this page use Information Center, page 24.

Raymond Rosen & Co. Dissolves Subsidiary

PHILADELPHIA — Raymond Rosen Equipment Co., a wholly-owned subsidiary of Raymond Rosen & Co., Inc., wholesale distributor, has been dissolved and its business will now be carried on directly by Raymond Rosen & Co., it was announced recently by Thomas F. Joyce, president.

Joyce explained that the equipment company was organized as a separate corporation in accordance with policies relating to internal management but that the reasons for the separation of the corporate entities no longer apply.

"All obligations of the equipment company, and all of its contracts, have been assumed and will be fully performed by Raymond Rosen & Co., Inc. in accordance with their terms," Joyce said. He added that the change in corporate structure will not interrupt the activities previously carried on by the equipment compan .

Central Refrigeration Wholesalers To Hold Golf Outing June 27

CHICAGO — Eleventh annual meeting and golf outing of Central Refrigeration Wholesalers Association-Region 6 will be held at Nippersink Manor, Genoa City, Wis., June 27-28, it was announced here.

Wholesalers from Wisconsin, northern Illinois, and northern Michigan have invited manufacturers to participate and ladies will be welcome.

For those who wish to remain the full weekend, arrangements have been made for reservations on June 29 also, it was announced.

Golf committee members include Pat Ravanesi of Service Parts Co., Melrose Park, Ill.; Gordon Carlstrand, Fred C. Kramer Co., Chicago; and James Alter, Harry Alter Co., Chicago.

Dunham-Bush Appoints F. T. Carney, A. S. Decker

WEST HARTFORD, Conn.— Cecil Boling, president of Dunham-Bush, Inc., has announced that two vice presidents were elected at a recent meeting of the board of directors.

F. T. Carney

A. S. Decker

Alan S. Decker was elected vice president of engineering, and Frank T. Carney vice president of purchasing. In their new capacities Decker and Carney will be the over-all coordinators of engineering and purchasing, respectively, for the entire corporation, its divisions, and subsidiaries.

Decker is a graduate of the Webb Institute of Naval Architecture with a B.S. degree in mechanical engineering and naval architecture. Joining Heat-X, Inc., Brewster, N. Y. in 1950 as chief engineer, Decker later became general manager. In 1955 he was appointed director of production and engineering for Dunham-Bush, in which position he has served until his recent election as vice president of engineering.

Carney graduated from Holy Cross college with an A.B. degree and from the University of Pennsylvania Graduate School of Business Administration with an M.B.A. degree. He joined Bush Mfg. Co. (now Dunham-Bush) in 1934 and has served in many capacities.

Upon consolidation of C. A. Dunham Co. and Bush Mfg. Co., he became director of purchasing.

Gorman Resigns from Johnson Service Post

MILWAUKEE — Retirement of John S. O'Gorman, Jr. as manager of the Detroit branch has been announced by John H. Colby, vice president and general sales manager of Johnson Service Co. here.

O'Gorman has been with the Johnson organization since 1931 and has been its Detroit branch manager since 1935. He will continue as a member of the Johnson board of directors.

He will be succeeded by James L. Best who has been assistant branch manager.

The company also announced new addresses for its Halifax and Louisville branch offices.

Halifax operations have been moved to 78 Sackville St. W. J. Chaffey is in charge. The Louisvill branch has moved to 2251 S. Shelby St. N. A. Ballinger is in charge.

Compressors--

(Concluded from Page 1)

sors designed for use with ammonia refrigerants.

Of the January 1957 total, 48,435 of the compressor bodies shipped were of the type used in automotive air conditioning. A comparative figure for the same period of 1956 is not available, but total 1956 shipments amounted to 284,022 units.

Figures for compressor bodies, broken down by categories, together with the names of reporting companies, follow:

MANUFACTURER'S SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators)

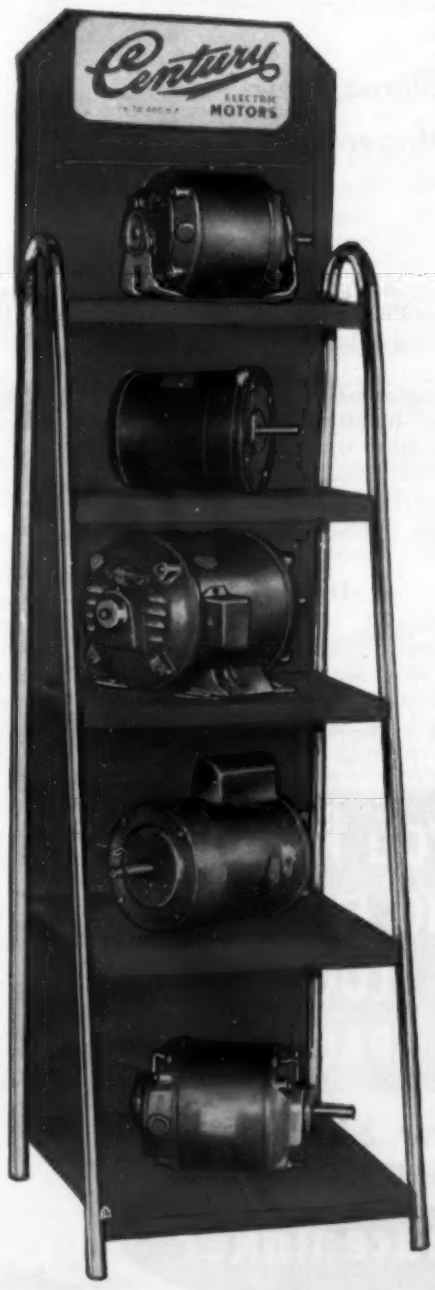
Horsepower*	Shipments Including Exports Jan., 1957
⅛ & under	34,688
¼	57,478
⅓	13,924
½	8,521
¾	65,383
1	94,896
1½	27,097
2	25,423
3	9,021
5	7,775
7½	3,789
10	840
15	245
20	225
25	193
30 & over	545
Total	**350,073**
For Ammonia Refrigerant—Total	131
For Automotive Air Conditioning—Total	48,435
Grand Total	**398,639**

*For all refrigerants **except** ammonia (excluding units for automotive air conditioning).

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Mfg. Co.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co., Refrigeration Div.; Frick Co., Inc.; Frigidaire Div., General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co., The; Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Corp., Subsidiary of Borg-Warner Corp.

This summary includes all compressor bodies shipped by the reporting companies **regardless** of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are **not** included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.



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Checkout, Shelving Maker Contacts Refrigeration Distributors Directly

CINCINNATI — Sales engineers for the Robert Becht Co., manufacturer of mechanical checkout equipment and shelving, are now contacting refrigeration equipment distributors and supermarket chains directly, Robert H. Becht, president, has announced.

Becht said that his firm's working agreement with Friedrich Refrigerators, Inc. has been terminated by mutual agreement.

He added that the firm now has representatives in four major cities and expects to add one in Dallas soon.

William Greville represents Becht in New York City, Jerry Johnston in Chicago, Roy Taylor in Atlanta, and Harold Gray in Cincinnati.

Food, Drug Officials To Hear Canned, Frozen, Processed Food Report May 5

SAN FRANCISCO — A feature of the annual meeting of the Association of Food & Drug Officials of the United States May 5-10 at the Brown hotel, Louisville, Ky., will be the report of the committee on canned, frozen, and processed foods.

Chairman of the committee is Milton Duffy, chief of the Bureau of Food & Drug Inspection, California State Dept. of Health.

At its 1956 meeting the association asked Duffy's committee to develop a model code based on facts developed by competent research.

The resolution adopted declared dangers of excessive microbial contamination in precooked frozen foods are real and unless every safeguard is employed unwholesome foods may enter retail channels through a few careless producers or distributors and adversely affect large numbers of consumers.

Holding and storage temperature standards need to be established, the resolution also stated.

When Duffy goes to Louisville he will have in his brief case results of a five-year research project on frozen foods just concluded at Western Utilization Research branch, U. S. Dept. of Agriculture, Albany, Calif., together with reports from Dr. Gail Dack, professor of bacteriology at University of Chicago, who has been retained by the frozen food industry to develop reliable data needed in the formulation of a model code.

Duffy was not prepared to state what the report of the committee, or the action of the association, might be. He did say discussion has centered around proposals that holding temperatures for frozen foods be -20° F., or -10° F., and that there be legal standards of bacterial content.

Koch Film Shows New Reach-In Refrigerator

KANSAS CITY, Kan.—Koch Refrigerators, Inc. has completed an 18-minute sound film demonstrating the new Koch Series "M" reach-in refrigerators.

The film is available to schools, institutions, and groups interested in an integrated system of cold-food handling for mass feeding groups, the company said. The film may be obtained by writing Koch Refrigerators, Inc., 401 Funston Rd., Kansas City, Kan.

To Cool City Hall

BELLEVILLE, Ill. — Construction contracts totaling $710,591 for a new air conditioned city hall were awarded by City Council here. Building is expected to take about a year.

Bulk Milk Tanks--

(Concluded from Page 1)

installed in the past year—4,263.

In nine states alone, the total increase in installed farm tanks in 1956 amounted to 18,841. The nine, with the number installed in the 12 months of 1956 indicated in parentheses, are Illinois (2,775); Indiana (1,400); Iowa (1,490); Kentucky (1,177); Michigan (2,000); Minnesota (2,500); New York (1,050); Ohio (2,213); and Wisconsin (4,263).

Complete installation statistics are as follows:

	Jan. 1, 1956	Jan. 1, 1957
Alabama	60	200
Arizona	425	450
Arkansas	35	151
California	3,550	3,550
Colorado	185	358
Connecticut	786	1,415
Delaware	35	46
Florida	650	850
Georgia	396	412
Idaho	225	267
Illinois	1,500	4,275
Indiana	700	2,100
Iowa	1,010	2,500
Kansas	400	600
Kentucky	200	1,377
Louisiana	45	212
Maine	600	809
Maryland	723	1,282
Massachusetts	469	747
Michigan	1,000	3,000
Minnesota	2,500	5,000
Mississippi	27	85
Missouri	48	824
Montana	80	100
Nebraska	140	975
Nevada	106	166
New Hampshire	161	234
New Jersey	588	702
New Mexico	45	67
New York	850	1,900
North Carolina	250	522
North Dakota	95	135
Ohio	787	3,000
Oklahoma	175	344
Oregon	655	998
Pennsylvania	1,200	2,020
Rhode Island	92	170
South Carolina	184	374
South Dakota	500	675
Tennessee	150	300
Texas	451	1,150
Utah	228	425
Vermont	418	828
Virginia	750	1,000
Washington	2,900	2,925
West Virginia	11	17
Wisconsin	3,464	7,727
Wyoming	36	72
U. S. Total	**29,885**	**57,336**

Association officials pointed out that in several instances, figures for installations on Jan. 1, 1956 are slightly different from earlier figures announced a year ago. The above figures are the latest revision of the statistics.

Frozen Confections Firm Rebuilds Plant

SACRAMENTO, Calif.—Vitafreeze Equipment, Inc. here, manufacturer of equipment used in making frozen stick confections, sliced and dipped ice cream, and other frozen confections, is planning to completely redesign and rebuild its plant which was completely destroyed by a fire recently.

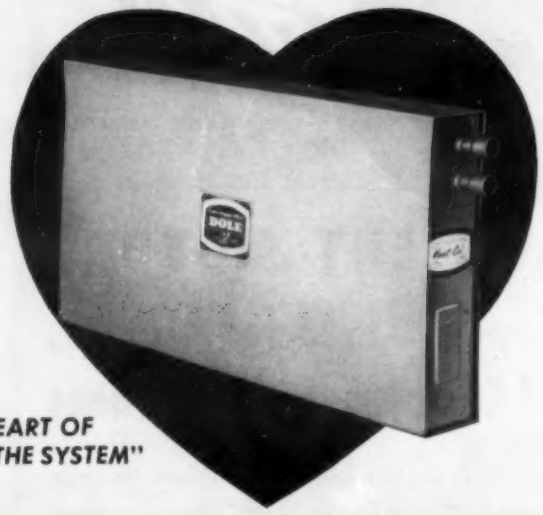
A faulty heating system caused the fire. Loss was estimated at $750,000.

It was noted that the company is accepting orders and going ahead with plans to use facilities offered by other manufacturers.

"These offers are greatly appreciated," M. B. Rasmussen, president, said. "They make it possible for us to continue to serve our customers while we are building a better plant."

DEFROST PROBLEMS?
Here's the ANSWER!...

ELECTRIC
Heat-Cel



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Automatic DEFROST
FOR NEW OR EXISTING INSTALLATIONS

- Heat for re-evaporation supplied by low wattage, long life ELECTRIC HEATER.
- Positive, consistent, economical.
- Performs efficiently in any ambient, regardless of location or season.
- Independent of compressor operating time or type (air or water cooled).
- Solution temperature automatically maintained by thermostat.
- Adjustable for individual operating conditions.
- No special controls needed for winter-time operation.
- Higher wattage elements available for extreme conditions.
- Heater replaceable in the field.
- Patented DOLE VACUUM principle insures faster heat transfer for quicker defrosting . . . convenient "plate" design allows flat-against-wall mounting.

Write for Engineering Catalog DBE.

*Defrosting "Kit" includes Heat-Cel * and Accessory Package containing all necessary controls*

* *Approved by Underwriters Laboratories*

Maximum Refrigeration Efficiency DOLE THE Cel LINE

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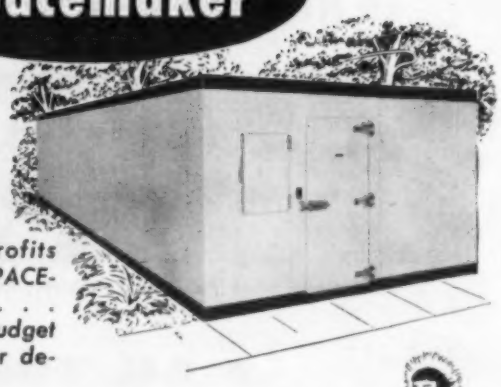
103 PARK AVENUE, NEW YORK 17, N. Y.
In Canada: Dole Refrigerating Products Limited
44 Elgin Street, Brantford, Ontario

YOU NEED NO EXTRA FLOOR SPACE!

- Coolers, Two-Temp and Freezer Models
- Outdoor or Indoor
- Sectional Construction for Custom-Built Refrigerated Storage

New SCHMIDT
OUTDOOR, WALK-IN
"spacemaker"



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smartest new top in town

and beautiful!

the all new
Temprite
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✓ new trim dimensions
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Send me complete details on the new Temprite Cadet Model PA-35

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Address_____
City_____ State_____

For more information about products advertised on this page use Information Center, page 24.

Exhibitors at Restaurant Show--

(Concluded from Page 1)

show as a guest, with no charge for registration.

On the following three days, the show will be open from 8:30 a.m. to 6 p.m. On the final day, Friday, it will close at 4 p.m.

A feature of the convention will be an equipment maintenance show scheduled for 9 a.m. Thursday. One portion of the show will be devoted to what every restaurant manager should know and do about refrigerator maintenance.

Doyle Carpenter of Tyler Refrigerator Co. and John Ruffley, associate director of research for NRA, will preside.

Another scheduled feature will be a chalk talk presentation on layouts for school food service. This will be presented by Justin H. Canfield, sales manager for the Southern Equipment Co.

His presentation will be followed by comments from a panel of school food service personnel and questions allowed.

Ken White of Ken White Associates, Westwood, N. J., will tell how to "cut costs with proper layout" as part of the decorating, building, and remodeling show.

Other special features of the convention include "Shop Talk" sessions on various aspects of food service, a food show, and a decorating and furnishings center containing four model restaurants.

Manufacturers of refrigeration equipment exhibiting at the exposition and their booth numbers are:

All Metal Food Equipment Corp. ..D-185
American Automatic Ice Machine Co. D-98-100
American Gas Machine Co. ..D-110-112
American Motors Corp. D-273
Anheuser-Busch, Inc. C-260
Bally Case & Cooler Co. D-13
Bastian-Blessing Co. C-53-61
Carbonic Dispenser, Inc. B-35
Carrier Corp. C-343-347
Chicago Hardware Foundry Co. B-350-352
Cold Corp. of America A-239-241
Coldin Cabinet Co. A-276-278
Dunhill Soda Fountain Corp. ..D-177-181
Elliott-Williams Co. C-182
Evans Mfg. Corp. B-275
Everfrost Sales, Inc. C-303
Fogel Refrigerator Co. A-263
Foster Refrigerator Corp. A-36
Freez King Corp. B-344
General Equipment Sales, Inc. B-260
Glenco Refrigeration Corp. ...D-133-137
Herrick Refrigerator Co. D-92-96
Howard Refrigerator Co., Inc. C-243
Ideal Cooler Corp. D-137
Jenn Air Products Co., Inc. D-322
Jet Spray Corp. B-137-141
Jordon Commercial Refrigerator Co. B-11
Stanley Knight Corp. C-1-7
Koch Refrigerators, Inc. B-108-110
La Crosse Cooler Co. D-146-148
Leitner Equipment Co. D-164-172
Lern, Inc. B-248-250
McCall Refrigerator Corp. C-94
Mallow Products, Inc. B-57
Midwest Mfg. Co. D-283
Monitor Dispenser Co., Inc. C-10-12
Norris Dispensers, Inc. A-260-262
Polar Chips Mfg. Co. A-273
Port Morris Machine & Tool Works B-234-236
Progressive Metal Equipment, Inc. A-67-73
Puffer-Hubbard Refrigerator Co. ..D-268
S & R Soda Fountain Mfg. Co. C-158
C. Schmidt Co. D-350
Selmix Dispensers, Inc. D-152-156
Silver Refrigerator Mfg. Corp. D-308
A. O. Smith Corp. A-97
Stainless Food Equipment Co. ..D-314-318
Star Metal Mfg. Co. C-127-131
Sweden Freezer Mfg. Co. ...C-207-221
Tekni-Craft C-323-327
Temprite Products Corp. B-282
Emery Thompson Machinery & Supply Co. C-262
Traulsen & Co., Inc. D-317
Tyler Refrigeration Corp. A-151
Tyson Metal Products C-316
Uniflow Mfg. Co. D-236
United Refrigerator Co. B-69-71
Vendomatic, Inc. C-287
Victory Metal Mfg. Corp. C-163-167
Henry Vogt Machine Co. D-120
Wyott Mfg. Co. C-15

Refrigerator Features Mobile Food Rack, Full-Length Doors

PLYMOUTH MEETING, Pa. —A "new idea in bulk food handling"—Vimco Series "V" refrigerators—has been developed by Victory Metal Mfg. Corp. here and will be displayed for the first time at the National Restaurant Show in Chicago.

This announcement was made by A. Raymond, president of the firm, which makes "Vimco," "Sta-Kold," and "Sno-Queen" refrigerators.

"This new method in bulk unit loading, unloading, and handling of foods, centers around a mobile full length food file rack that can be placed in or taken out of the refrigerators with ease by a specially designed cart," it was explained.

"Vimco Series 'V' refrigerator doors are full length to house this unit, thus eliminating loss of space due to cross mullions, back wall or ceiling type refrigeration coils.

"This new mobile unit will hold as many as 126 12 by 20 by 2-in. deep pans and will also take all other pans—full or fractional sizes. It will also incorporate the famous Vimco, Sta-Kold, Sno-Queen patented interchangeable features that will accommodate regular or pull-out shelves, pull-out trays, and pan slides.

"The new Vimco Series 'V' refrigerator, in the two years required for its development, has been subjected to the most severe field tests to insure that they will withstand the rugged use of busy commercial kitchens."

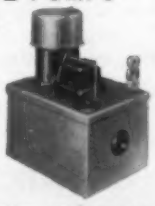
N.Y. Contractors Merge, Become King-Freeze Corp.

NEW YORK CITY — King-Freeze Corp., air conditioning and refrigeration contractor here, recently merged with another contracting firm, F. J. LoPresto Refrigeration Co., under the name King-Freeze Corp.

Facilities are located at 496 Tenth Ave. here and in Long Island City, according to Murry Wolfeld, president. A new radio control system will be used for dispatching service vehicles, he added.

Other officers of this specialist in low temperature, soda, and beer systems, ice cube machines, and air conditioning are: Frank LoPresto, executive vice president; Al Martinez, second vice president; Saul Bush, secretary; and Sidney Singer, treasurer.

HY-LO MODEL CS
CONDENSATE PUMPS
- TWO INCH DRAIN
- MAGNETIC CONTROL
- HEADS TO 20 FT.
- COMPLETELY WIRED
- 115 V. OR 220 V.



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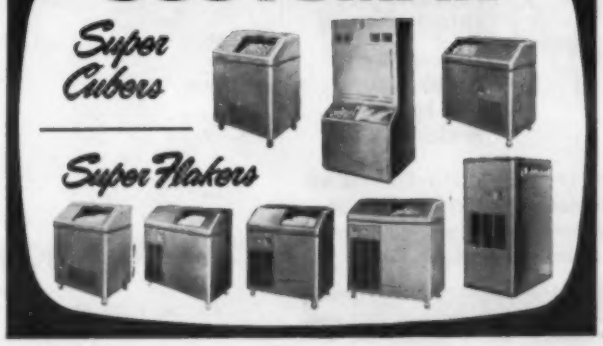
SELL ALL PROSPECTS WITH
SCOTSMAN
ice machines!

YOU MAKE MORE MONEY with Scotsman because you can offer a machine to *fit any ice need!* You have *more* to offer prospects—40 Super Flakers, Super Cubers, Bins and Dispensers—*more* places to cash in on the Scotsman line!

AND SCOTSMAN HELPS YOU sell these prospects! Effective national ads . . . a brand new book, "How to Use an Ice Machine" to leave with prospects . . . deluxe brochures . . . new ad mats . . . direct mail pieces . . . a sensational new demonstration kit . . . *everything* you need to make Scotsman ice machine sales.

AND DON'T FORGET: As a Scotsman dealer, you're backed by a national organization devoted *entirely* to ice machine sales and service. Ice machines are the mainline—not a sideline!

WHY NOT BECOME A SCOTSMAN DEALER and get your share of the big profits? Send coupon for complete details today.



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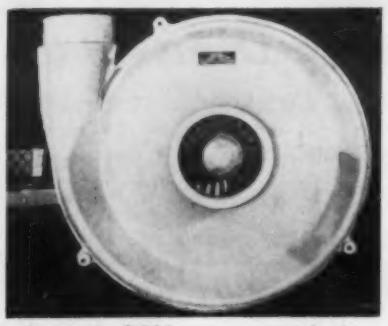
Mail to: American Gas Machine Co., Division of Queen Stove Works, Inc. 204 Front Street, Albert Lea, Minnesota

Centrifugal Blower Operates In 4 P.S.I.G. Range

——KEY NO. G-450——

SANTA MONICA, Calif. — Designed to gap the pressure range between centrifugal and axial blowers, Turbo Research Corp. here recently offered a low-noise centrifugal blower which operates in the 4 p.s.i.g. range.



Model 101 is constructed with heavy-duty, grease-packed ball bearings in cast iron housing which forms a rugged base for the aluminum compressor, the company said. Delivered volume with standard inlet conditions is 1,300 c.f.m. at 8,000 r.p.m. against a discharge head of 4 p.s.i.g.

Ice Cube Makers Optional In 'Speed-Freeze' Line

——KEY NO. G-451——

ST. LOUIS — Ice cube makers are now optional features of the Ideal "Speed-Freeze" line of beverage coolers, Ideal Cooler Corp. announces.

Eight-foot coolers contain 20 trays and 6-ft. coolers 15 trays. Each tray manufactures about 1¾ lbs. of commercial size cubes.

Because of its patented coil, even with the addition of the ice cube maker, the 8-ft. remote Ideal cooler has a capacity of 48 cases of 12-oz. bottles.

The ice cube making and the bottle cooling compartments are individually controlled to prevent the freezing of bottle goods even if ice cubes are made continually. As a result one can have a number of freezings per day.

Gas, Oil-Fired Winter Conditioners Added

——KEY NO. G-452——

MEDINA, Ohio — An entirely new, complete line of "Moncrief" gas and oil-fired winter air conditioners was recently announced here by Henry Furnace Co.

Gas-fired units are available in capacities of 75,000, 100,000, and 125,000 B.t.u. input, with a 150,000 B.t.u. size to be produced later, the company said. Both upflow and counterflow models are 26 in. deep with upflow 54 in. high and counterflow 64 in. Widths are: 75,000 B.t.u. size 16 in.; 100,000 20 in.; and 125,000 22 in.

Moncrief oil-burning furnace is shipped with oil burner and refractory box installed. Use of flame detector mounted on burner nozzle tube, instead of stack switch attached to flue vent, is claimed to make it possible to wire the complete burner circuit at the factory. First model of 78,400 B.t.u. capacity at bonnet is 20 in. wide by 26 in. deep by 62 in. high. Another size, of about 100,000 B.t.u. at bonnet is due later.

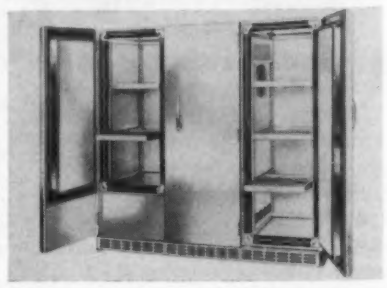
Compact, the new units have heavily constructed cabinets with unbroken side and rear panels, rounded corners, and supporting channels. A smooth baked enamel finish in two tones of charcoal and light gray blends with decor.

Both furnace types have provision for higher air delivery needed for summer air conditioning.

All-Metal Freezer Features Automatic Defrost

——KEY NO. G-454——

PLYMOUTH MEETING, Pa.— An all-metal "Sta-Kold FA 60-S" self-contained freezer which features a Kramer "Thermobank" automatic defrosting system with forced air circulation was recently introduced here by Victory Metal Mfg. Corp.



Interiors of the unit can be interchanged "in minutes," the company said. Ice scraping and ice build-up are eliminated. Interiors are adjustable on 1-in. centers to handle any combination of baker's pan slides, stationary or pull-out meat rails, stationary or pull-out shelves, and refrigerated drawers, the company noted.

The unit has eight shelves, three doors, and 60-cu. ft. capacity. It is 75⅜ in. wide, 33½ in. deep, and 72¾ in. high. Cabinet is of stainless steel, aluminum, baked white enamel, or porcelain. Interiors have automatic lighting, are coved and ball corners welded, ground, and polished. Full length doors permit utilization of storage space, have built-in locks and die-cast handles with one-piece gasket. There is a full length mullion coil.

Federal Introduces 4 New Commercial Cases

——KEY NO. G-455——

WAUKESHA, Wis. — Federal Refrigerator Mfg. Co. here recently announced a new four-shelf dairy case, frozen food merchandising case, meat merchandiser, and produce refrigerator case.

Dairy case is low in construction with deep shelves for mass display, the firm said. It has adjustable removable center shelves.

Automatic electric defrosting is a feature of the frozen food merchandiser. It has top reach-in height of 35½ in.

Meat merchandising case features an extra large display area and also top reach-in height of 35½ in. It has adjustable shelves, glass front, and is claimed can be converted to frozen food usage.

With a new precision temperature feature, produce cases are said to reduce cutting and trimming time. They have large mirrored superstructure.

Designs 'Install-It-Yourself' Auto Conditioner

——KEY NO. G-456——

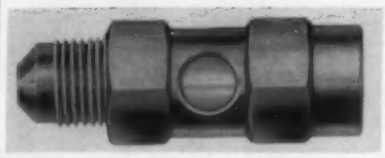
CHICAGO—An "install-it-yourself" automobile air conditioner has recently been introduced here by Kool Engineering Corp.

Its cooling cabinet with multi-speed blower mounts either under the dash or in the trunk of a car. An adjustable grille directs cool air to any part of the vehicle.

Compressor and other parts of the 85-lb. unit mount under the hood, the company explained. It fits nearly all 1951 to '57 trucks, autos, taxis, and station wagons.

Rubber hose connections are used throughout the $185 unit. Cabinet is 9 in. in diameter and 8 in. deep and installation time is claimed to be less than four hours. All parts are included.

Positive Sealing Indicator Offered



——KEY NO. G-453——

CHICAGO — A new "Liquid Eye" positive sealing indicator designed for mass production was recently developed by Allin Mfg. Co.

Known as "237," the indicator is smaller than any of the firm's previous units. It is one third smaller in the 3.8 in. male to female size.

Available with either two or three viewing ports, the self-contained unit comes in ⅜ in. M.Fl. by ⅜ in. Fe.Fl. size.

Information Center

For *more information* on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

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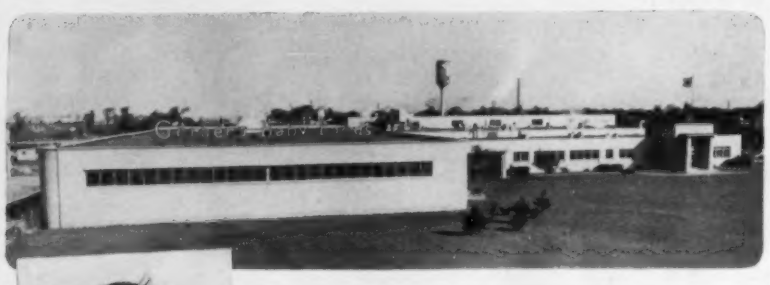

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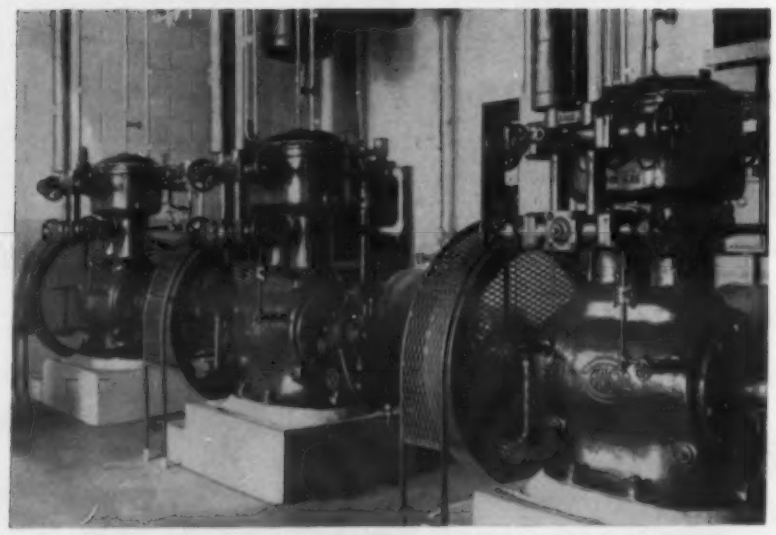

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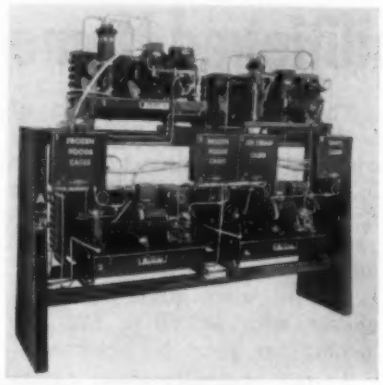


McCray Produces 3 Compressor Racks

——KEY NO. G-457——

KENDALLVILLE, Ind.—McCray Refrigerator Co., Inc., has announced the availability of compressor racks for the unitized assembly of air-cooled condensing units.

They will be identified as the ACR-2F for two machines of fractional horsepower, ACR-2 for two machines of larger sizes, and the ACR-4 for four air-cooled units.

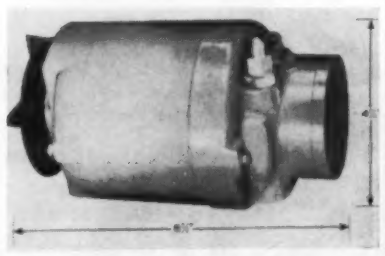
"The racks are compact and sturdy," it was pointed out. "Engineered and assembled to specifications at the factory they can be delivered to the job as a complete package ready to be put into service with a minimum of field installation work.

"This eliminates chances for installation errors and cuts installation costs. Once located it is only necessary to run tubing to the proper machine and one power line to the rack.

"Components are unitized for easy accessibility and observance. Each component in the same system is identified and each complete refrigerating system is identified for its usage.

"The complete assembly is painted dark blue. Decals are yellow for contrast."

'Powermite' Combines Pump and Motor



——KEY NO. G-458——

CHICAGO — The Tuthill Pump Co. recently announced release of its new "Powermite" pump and motor combination.

Developed specifically to meet the needs of original equipment manufacturers with unusual space and weight limitations, the Powermite model combines a positive displacement internal gear rotary pump, a driving motor, and a cooling blower in a space measuring 8½ by 4¾ in.

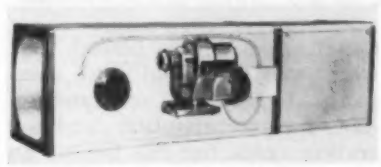
By incorporating the motor and blower into the pump design, Tuthill's engineers have been able to develop a unit which takes up no more space than a standard electric motor, the firm said. A single shaft serves all units of the Powermite. Substantial economies for OEM are obtained through the elimination of couplings, other parts, and assembly time, and labor costs, it was claimed.

Powermite can be furnished, in large production runs only, in a wide variety of pump and motor combinations. For example, one model has a capacity of 18 g.p.h. at 300 p.s.i. and is driven by a ½₂-hp. motor at a speed of 1,750 r.p.m.

Powermite combinations may be supplied with a cooling blower. A shaft extension (for driving other accessories) may be supplied if desired.

Develops Oil-Fired Horizontal Furnace

——KEY NO. G-459——



MARSHALLTOWN, Iowa—Lennox Industries, Inc. claims to have developed an entirely new oil-fired horizontal forced-air furnace that is "responsive, efficient, and durable."

The furnace, called the "Starfire Stowaway," attains a new high in operating economy, according to Lennox.

One of the features of this furnace is an ultra-modern finned-type heat exchanger made of quick-heating steel. The manufacturer maintains that the finned design plus the rapid heat transfer properties of the steel result in a degree of efficiency never before achieved.

Combination gases are forced through the long thin fins, and special turbulators force the air from the return ducts to "scrub" the exchanger fins and thus pick up maximum heat.

Lennox also claims that the new exchanger will last longer than other types because it does not get as hot near the combustion chamber. In this critical area more than two times the normal amount of steel perimeter has been provided to dissipate heat quickly, and a metal liner surrounds the heat exchanger to keep the outer cabinet from becoming hot.

The combustion chamber is lined with "Silica Felt," a lightweight lining. This material is said to do a better job of refracting heat within the combustion chamber while protecting the steel from burnout.

Because of its light weight, Silica-Felt heats quickly on its inner surface to assist the complete combustion of the oil. When the burner shuts off the liner cools instantly and does not reflect heat back to the nozzle to form clogging carbon deposits.

Commercial Clothes Dryer Holds 16 Lbs.

——KEY NO. G-4510——

NEW BEDFORD, Mass.—Schmidt Mfg. Co. here recently developed a new commercial clothes dryer of 16-lb. dry weight capacity with what the company claims to be seven design features.

"Twin Jet" automatic dryer, called the "Sahara," was engineered for self-service and quick service laundries, hotels, motels, mobile home courts, nursing homes, and coin-operated apartment house laundries, the company said.

Twin gas jets are said to provide good turn-down and heat control. They cannot clog from lint or dirt, the company declared. In addition, the "Duct-A-Dor" conducts warm air down through the lint screen and out the exhaust.

A "For-N-Aft" circular air flow puts warm air through the tumbling cylinder from back to front and "Safti-Lok" temperature control has a locked high limit for maximum safe temperature, the firm added. An extra-high rib in the cylinder is said to pick up clothing "for maximum drop," it was noted.

Over-all size of the 375-lb. unit is 54½ by 34½ by 33¼ in. Model D-116 is timer controlled, while model DCM-116 is coin operated and a one-year guarantee against defective materials or workmanship is given, the manufacturer said.

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Study Shows Added Mineral Wool Insulation Cuts Cost In Conditioned Home

AUSTIN, Texas—Home builders can construct air conditioned houses at less cost by using considerably more than the minimum amount of insulation required by the Federal Housing Administration.

Thick mineral wool insulation enables owners of air conditioned houses to save substantially on annual heating-cooling operating costs. In Southern states, this savings averages as much as 57% of the cost of added insulation installed.

Those are the main conclusions reached in a research study by John R. Watt, associate professor of mechanical engineering at the University of Texas.

He took data from eight Air Conditioned Village houses that were well insulated and compared figures on construction cost, fuel consumption, and operating costs for the houses as built with what these figures would have been if the houses had been insulated in accordance with current FHA minimum requirements.

Prof. Watt, who was chief analyst of the village during its 18 months of operation, found that the builders saved an average of $139.60 in construction cost.

While adequately thick mineral wool insulation was an added expense, it lowered the heat gains of all eight houses sufficiently to permit the use of smaller and less expensive cooling equipment, he said.

In every case except one, the net result to the builder was a savings. The greatest net savings was $511.17. The one exception resulted in a net added cost of $19.60.

Prof. Watt said, "Each dollar spent on adequate insulation for air conditioning above current MPR requirements saves $1.82 in otherwise required equipment, a net saving of 82 cents. This . . . should reduce mortgage requirements."

The average annual operating cost savings was $107.90, computed at "country-wide average" rates of 10 cents an effective therm for gas, 2 cents a kwhr. for electricity, and 25 cents a 1,000 gals. for water.

Each dollar's worth of insulation above current MPR requirements reduces average operating cost by 63 cents, Prof. Watt explained.

He asserted that this "benefits the home buyer, improves his . . . mortgage acceptability, and gives the builder a sales tool for attracting other buyers."

The realistic combination of a $100 reduction in building cost and a $50 annual reduction in operating cost should reduce the monthly payment on a 20-year, 5% mortgage and the monthly operating cost $4.87. It would also qualify a purchaser with $83.60 to $92 less income per year, he asserted.

At the generally lower utility rates charges in Austin, the average annual operating savings was $80.35. Austin rates are 5.4 cents a therm for gas, 1.6 cents a kwhr. for electricity, and 25 cents a 1,000 gals. for water.

On this basis, the highest operating savings among individual houses was $123.11. The lowest was $21.30—this in a house where the cooling system normally was not operating during the daytime, when all members of the family customarily were absent.

Prof. Watt explained that at Austin's winter design temperature of 10° F., the FHA's current minimum property requirements permit house walls to have a heat transfer coefficient ("U" value) up to .35 and ceilings up to .15.

He noted that "a few propose to increase ceiling coefficients to .18 to foster cheaper insulation and reduce costs of masonry houses. Others maintain that walls need no insulation and that 1.5 in. of mineral wool,

(Continued on next page)

HOUSE I

	House If Built Within Current FHA Requirements	House as Built for Air Conditioning
Mineral Wool	Walls None Ceilings 1½ in.	Walls 3 in. Ceilings 6½ in.
Heat Transfer Coefficient (U value)	Walls (av.) 0.31 Ceilings 0.15	Walls = 0.074 Ceilings = 0.04
Heat Gain In Summer Design Conditions	40,750 B.t.u.	24,410 B.t.u.
Heat Loss In Winter Design Conditions	75,798 B.t.u.	52,085 B.t.u.
Added Cost of Insulation	....	(A) $263.08
Cooling Equipment Needed	4 Tons*	2 Tons
Savings In Cooling Equipment	....	(B) $774.25
Net Savings to Builder (B-A)	....	$511.17
Annual Heating In Therms	629	432
Annual Heating In Kwh.	173	119
Annual Cooling In Kwh.	10,670	6,383
Annual Water Consumption For Cooling		Air Cooled
Annual Heating and Cooling Cost In Austin	$212.30	$130.04
Annual Savings In Heating and Cooling Cost to Homeowner	....	$ 82.26

*Cooling needed is 4 tons, a non-standard size, consequently two 2-ton units are used.

HOUSE VI

	House If Built Within Current FHA Requirements	House as Built for Air Conditioning
Mineral Wool	Walls None Ceilings 1½ in.	Walls 3 in. Ceilings 6 in.
Heat Transfer Coefficient (U value)	Walls (av.) 0.35 Ceilings 0.15	Walls = 0.077 Ceilings = 0.043
Heat Gain In Summer Design Conditions	25,840 B.t.u.	11,800 B.t.u.
Heat Loss In Winter Design Conditions	56,305 B.t.u.	32,781 B.t.u.
Added Cost of Insulation	....	(A) $214.60
Cooling Equipment Needed	2 Tons	1 Ton*
Savings In Cooling Equipment	....	(B) $195.00
Net Savings to Builder (B-A)	....	$ 19.60 added cost
Annual Heating In Therms	593	345.6
Annual Heating In Kwh.	328	191
Annual Cooling In Kwh.	12,300	5,623
Annual Water Consumption For Cooling	23,660	10,800
Annual Heating and Cooling Cost In Austin	$237.55	$114.44
Annual Savings In Heating and Cooling Cost to Homeowner	....	$123.11

*Only 1 ton needed but 2-ton unit installed to comply with village specification.

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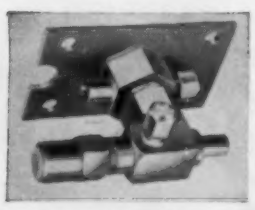
This new break-away type spud valve is engineered for compressors used for remote air cooled residential systems. It has a new built-in mechanical rotating connector that allows the valve to be rotated a full 360°. This new feature permits the valve to be placed in a direct line with suction or discharge tubing for easier, more efficient connection . . . permits instant compressor replacement in the field. Available in all standard sizes.



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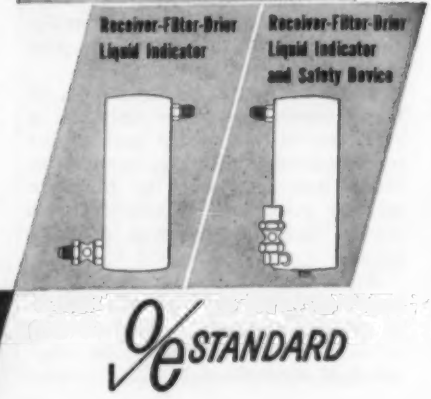

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WHOLESALE ONLY

For more information about products advertised on this page use Information Center, page 24.

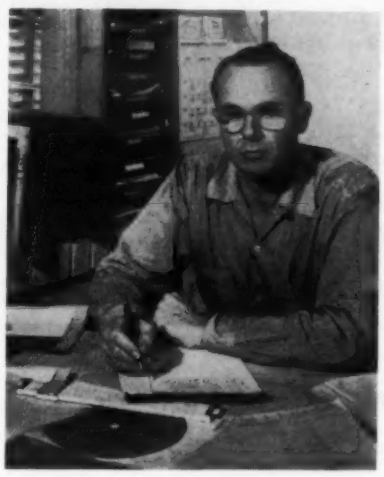
Mineral Wool Insulation --

(Continued from preceding page)

or equivalent, is adequate for ceilings.

"In both cases, advocates hope to reduce home building and financing costs. But persistent indications suggest that reduced insulation values raise these instead. This study was done to learn the truth."

His conclusion on this point is that "if FHA minimum allowable heat transfer coefficients for residences were to be increased the result would both increase equipment costs above construction savings and disproportionately raise the homeowner's operating costs."



AUTHOR of this research report is John R. Watt, associate professor of mechanical engineering, University of Texas. His report shows that effects of thick insulation in air conditioned houses permit builders to save money by using more mineral wool insulation than required by FHA.

ESTIMATED SAVINGS

Prof. Watt estimated savings for different regions.

"North and Central States—

"a. In homes equipped with all-year heating-cooling systems approximately 2 tons capacity, planned use of adequate insulation saves as much as, or more than, its own installed value in equipment cost.

"b. Where the cooling load in an insulated residence exceeds 3 tons, the use of extra insulation can save well over its installed value by making 3-ton equipment permissible in place of non-standard 4 or 5-ton units.

"South, Southwest States—

"a. In homes equipped with all-year heating-cooling systems approximately 2 tons capacity, insulation used above FHA current requirements saves in equipment costs up to 1.78 times its own installed value.

"b. Where the cooling load in an insulated residence exceeds 3 tons, use of extra insulation can save up to 3.05 times its installed value by making 3-ton equipment permissible in place of non-standard 4-ton or even 5-ton units."

The Air Conditioning Village at Austin, Prof. Watt's study explains, was "America's largest housing laboratory, including 22 adjoining single-story, one-family houses of approximately 1,250 sq. ft. of floor area, priced new between $12,000 and $16,000.

"Built in 1954 by members of the National Association of Home Builders, these have widely differing orientations, designs, materials, roofs, window styles, and types of sun shading, and 22 different all-year units.

"They also contain most standard types of insulation: batts, blown, rigid, fill, reflective, etc., in various combinations and thicknesses, selected by builder and air conditioning manufacturer to insure satisfactory and economical operation of 2-ton cooling units."

8 HOUSES INSULATED BY MINERAL WOOL

The eight houses selected by Prof. Watt were insulated entirely with mineral wool. Wall thicknesses were either 2 or 3 in. Ceiling thicknesses varied from 4 in. to 6½ in.

The most thickly insulated house had 3 in. of mineral wool in the walls with 6½ in. in the ceiling. In it, the net savings to the builder was the highest of all, $511.17. Annual operating savings came to $82.26 at Austin rates, above the average.

In his summary, Prof. Watt said: "Of the eight selected houses, one has extreme exposure, two have minimum, one is unoccupied in daytime, and another occasionally vacant; they include frame, veneer, and masonry construction and air cooled, water cooled, and absorption cooling. Thus, performance typifies homes everywhere."

DETAILED COMPARISONS

Here are detailed comparisons on three of the eight houses studied by Prof. Watt. House I shows the greatest net saving to the builder, House VI is the other extreme with slightly added cost, and House VII shows savings incurred even when the added cost of insulation is just offset by the savings in cooling equipment.

House I is a conventional frame and part veneer residence with attached garage, built on a bent or "dog-leg" axis over a crawl space. It has 1,350 sq. ft. of floor area and a hip roof with a light gray composition shingles and 30-in. over-hang.

The long walls face northeast and southwest, with a canvas canopy shading the latter's entire length. The floor has 3 in. of insulation between joists, while a ⅙-hp. fan force-ventilates the attic.

Cooled by air-cooled 2-ton equipment, this house has 743 sq. ft. of frame wall painted medium green, 124 sq. ft. of medium dark stone veneer wall, 184 sq. ft. of partition between house and garage, 285 sq. ft. of double-glazed projecting sash, and 1,350 sq. ft. of ceiling.

The effects of comparing FHA minimum with the house are:

Thus, in House I, each dollar invested in adequate insulation in excess of the FHA minimum requirements saved about $2.94 in equipment and 31 cents of yearly operating cost (annual saving $82.26).

House VI is a conventional frame and part stone veneer residence with attached garage, built on a slab foundation. With a generally square plan fronting southwest, it has 1,200 sq. ft. of floor area and a low-pitched, dark composition shingled roof over usual attic space.

The roof overhang varies from 3 ft. on northeast and southwest to half that on gable ends. The garage and recessed front porch further shade the kitchen and entrance, while southeast windows have shade screening.

There are 100 sq. ft. of medium dark stone veneer, 494 sq. ft. of light colored asbestos siding, 147 sq. ft. of shaded vertical wood siding, 168 sq. ft. of partition between house and garage, 140 sq. ft. of single glazed wood sash, and 1,200 sq. ft. of ceiling. One ton of cooling would suffice, but 2-ton water-cooled equipment was installed

(Concluded on next page)

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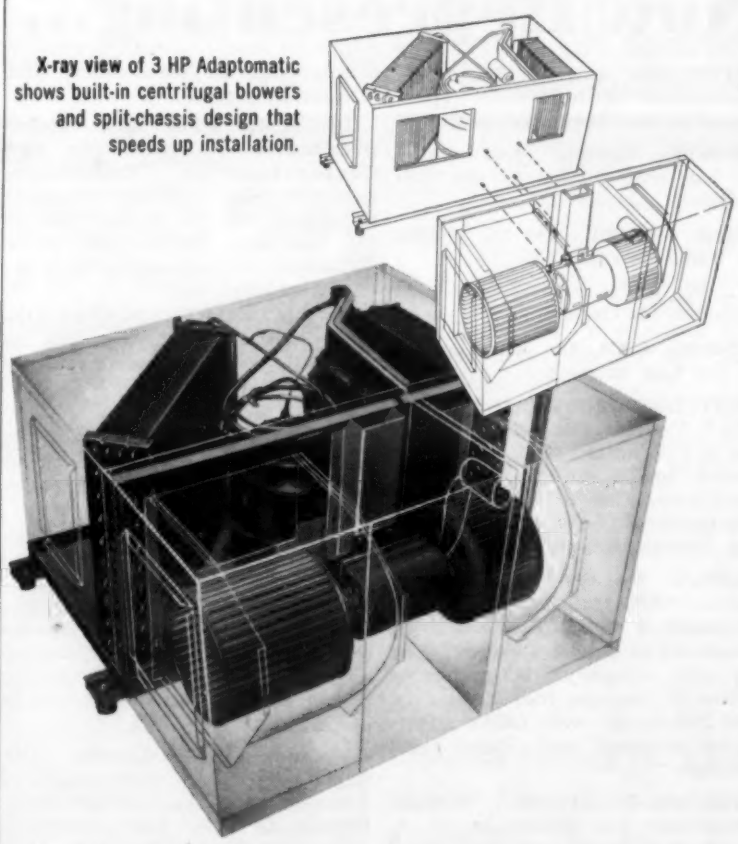
X-ray view of 3 HP Adaptomatic shows built-in centrifugal blowers and split-chassis design that speeds up installation.



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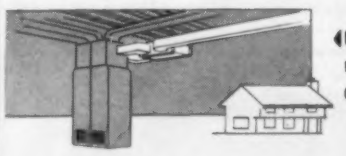
This is low-cost whole-house central air conditioning the average family can easily afford. *Not* an over-grown window unit, but a true central air conditioner with a retail list price as low as $499.50!

Installation is simple and fast. Your crew can do many more installations in the same amount of time. No expensive structural alterations needed! No large openings in outside walls – only a 12 inch x 14 inch opening called for. No water pipes or cooling towers! No on-site charging of hermetic lines!

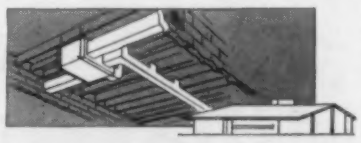
Powerful built-in centrifugal blowers push-pull condenser air under pressure to any point in the house through small ducts that open to the outside without cutting away studs. This unique principle allows the air conditioner to be located anywhere in the house – for maximum efficiency and minimum duct work. Adaptomatic attaches easily to existing warm air systems. Split-chassis design simplifies installation – can be brought in through doorway or even an opening as small as 24 inches x 24 inches.

Call your Fedders Distributor today and get the details on the Fedders Adaptomatic . . . and specialized sales helps that can put you into volume whole-house air conditioning fast.



CAN CONNECT TO WARM-AIR SYSTEM utilizing same ducts for heating and cooling to slash costs.

IN CRAWL SPACE, UTILITY ROOM where attic or basement is not available. So compact it takes little space.



IN ATTIC OR GARAGE ROOF. Can be located for minimum duct work to reach all rooms.

Available in 2HP and 3HP models

Make it another big year with... FEDDERS

World's most-wanted, most-enjoyed air conditioner

Mineral Wool Insulation--

(Concluded from preceding page)

to comply with specifications.

Following the FHA's current MPR would raise costs over house as built by the amount in savings shown below:

Thus, in House VI unused design cooling capacity almost absorbs the doubled load imposed by following the current MPR, but next size is needed for safe capacity.

However, each dollar of insulation installed over FHA current minimums saves about 91 cents in initial investment and 57 cents per year operating cost (at annual savings of $123.11.)

House VII is a conventional frame and stone veneer residence with attached carport built on a slab foundation. With long walls facing northeast and southwest, it has 1,258 sq. ft. of floor area and a low-pitched roof topped with light crushed limestone which overhangs them 3 ft. The front and rear porches and carport shade walls slightly, aided by southeast and northwest window awnings.

The house has 774 sq. ft. of dark cedar shakes and vertical wood siding, 296 of light colored stone veneer, 65 of double glazed and 76 of single glazed wood ceiling.

Heating is by hot water coils in the 2-ton standard water-cooled air conditioner, connected to conventional boiler and pump equipment.

Results of reduced insulation standards are summarized in the tabulation above.

Thus, in this house, insulation used in excess of FHA minimums saves almost exactly its own value in equipment, and each dollar's worth reduces annual heating-cooling costs about 47 cents (annual savings $104.57).

HOUSE VII

	House If Built Within Current FHA Requirements	House as Built for Air Conditioning
Mineral Wool	Walls None Ceilings 1½ in.	Walls 3 in. Ceilings 6 in.
Heat Transfer Coefficient (U value)	Walls (av.) 0.233 Ceilings 0.152	Walls = 0.061 Ceilings = 0.043
Heat Gain In Summer Design Conditions	29,800 B.t.u.	15,630 B.t.u.
Heat Loss In Winter Design Conditions	50,204 B.t.u.	32,601 B.t.u. (A)
Added Cost of Insulation	....	$223.15
Cooling Equipment Needed	3 Tons	2 Tons (B)
Savings In Cooling Equipment	....	$223.75
Net Savings to Builder (B-A)	....	$ 0.60
Annual Heating In Therms	648	421.2
Annual Heating In Kwh.	280	182
Annual Cooling In Kwh.	11,180	6,061
Annual Water Consumption For Cooling	19,900	10,800
Annual Heating and Cooling Cost In Austin	$230.00	$125.43
Annual Savings In Heating and Cooling Cost to Homeowner	....	$104.57

REFRIGERATION DIVISION MANAGER

Progressive manufacturing concern has need of experienced manufacturing manager to assume control of refrigeration and air conditioning division. Applicant should have strong manufacturing background in sheet metal fabrication and assembly work. Job entails complete responsibility for engineering drafting, production and inventory control, and all manufacturing operations. Excellent opportunity in a desirable area. Middle Atlantic State. In reply, please submit previous employment records and state salaries received. Write fully to: Personnel Director, Post Office Box 466, Richmond, Virginia.

...FLEXON VIBRA-SORBERS

NOW AVAILABLE FROM FLEXONICS

Flex-O-Tube synthetic Freon-resistant hose for refrigeration and air conditioning service. Write for information.

Looking for a way to eliminate the "shakes" from compressor piping? Install Flexon Vibra-Sorbers . . . great for isolating compressor noise and vibration in refrigeration and air conditioning installations.

All-metal Flexon Vibra-Sorbers provide excellent resistance to corrosion and fatigue . . . remain gas-tight under prolonged vibration . . . come to you clean in sealed polyethylene bags. U.L. listed in sizes ⅜" through 1½" for both high and low side service. Standard diameters to 8" available. Write for Bulletin 139.

V-23

Flexonics *Corporation*
CHICAGO METAL HOSE DIVISION
1415 S. THIRD AVENUE, MAYWOOD, ILLINOIS
Manufacturers of flexible metal hose and conduit, expansion joints, metallic bellows and assemblies of these components.
In Canada: Flexonics Corporation of Canada, Ltd., Brampton, Ontario

Now Representing...

RITTLING CORP (Buffalo)—Appointment of four sales representatives has been announced.

Brownlee-Morrow Engineering Co. has been named in the Birmingham, Ala. area.

Clyde Co. will cover the Berkeley, Calif. territory.

L. W. Kelly & Associates was named in the Greenville, S. C. area.

Tennity & Co., Inc. was appointed for Los Angeles.

MITCHELL MFG. CO., DIV. OF CORY CORP.—**Bond-Ridder-Jackson** of Charleston, W. Va. has been named to handle the room air conditioner line for the firm. It was previously handled by **Charleston Electric Supply Co.**

DOLE VALVE CO (Morton Grove, Ill.)—**Marsteller, Rickard, Gebhardt & Reed, Inc.** has been appointed to handle all advertising for the company. It maintains offices in Chicago, New York City, and Pittsburgh with Dole's advertising prepared and placed from Chicago.

RECOLD CORP.—**Tri-State Equipment Co.**, Preakness, N. J., has been named distributor for the west coast firm. Tri-State will handle both air conditioning and refrigeration products.

BEN-HUR MFG. CO.—**Major Distributors,** Oklahoma City, and **Cooper-Louisville Distributors,** Louisville, Ky., have been appointed outlets for the freezer line of the company. Major will cover Oklahoma, Cooper-Louisville western Kentucky.

AMANA REFRIGERATION, INC.—Four new distributors of Amana products were recently named.

McKee & McRae, Inc., Jackson, Miss. will wholesale the line in 52 counties of that state, covering all but the northern four tiers of counties.

Modern Kitchens, Inc. has been appointed distributor of built-in freezers and built-in refrigerators in the Washington, D. C. area. The firm will wholesale built-ins throughout the District, seven counties of Maryland, five counties in northern Virginia, and two in eastern West Virginia.

Washington Wholesalers, Inc. was appointed distributor of Amana room and central air conditioners in the same territory. **Amana of Washington, Inc.,** Alexandria, Va., will continue to handle freezers, freezers-plus-refrigerators, and "Deepfreeze" chest freezers in the area.

Standard Agencies, Ltd., Montreal, Que., Can. was named distributor of Amana air conditioners in that province. **Amana (Quebec), Ltd.** of Montreal will continue to handle the freezer and refrigerator distribution in the area.

CARRIER CORP—Appointment of two new manufacturers' sales representatives to expand distribution facilities for unit heaters has been announced.

Norman S. Wright & Co. of Phoenix will represent the firm in Arizona. The organization has handled Carrier in Oregon and Washington for years and recently expanded into the southwest. Robert Langmade is manager of the new Phoenix branch.

McMillan Equipment Co. of Houston, Texas is the second outlet named. Both firms will handle all of Carrier's unit heater lines and heating and ventilating equipment.

JOHN WOOD CO.—Appointment of **Erskine E. Traynham** as sales representative for the company's Heat & Tank Div. in southern Virginia, North Carolina, South Carolina, and eastern Tennessee has been announced. He will headquarter in Greenville, S. C.

FORSTON CO. (Houston, Texas)—**Brown & Lawson Co.,** Dallas, has been named distributor for the firm's auto air conditioners.

FRASER & JOHNSTON CO.—**Dygert Distributing Co.,** Grand Rapids, Mich., has been appointed distributor for that area. Appointment was made by Earl Palmer of **Lord & Palmer, Inc.,** manufacturers' representatives for Fraser & Johnston in Grand Rapids.

J. F. PRITCHARD & CO. (Kansas City, Mo.)—**Steel & Engineering Products Co.,** El Paso, Texas, has been named sales representative for New Mexico and the western tip of Texas.

AIRTEMP DIV., CHRYSLER CORP.—**Bragg Distributors, Inc.,** Wichita, Kan., has been named distributor for residential and commercial air conditioning and heating equipment for the southern half of Kansas.

REMINGTON CORP—**Harry G. Duval,** Richmond, has been appointed Virginia representative for room air conditioners. He has been associated for some years in the cooling and fan business there.

PERFECTION INDUSTRIES, DIV. OF HUPP CORP.—Six furnace and air conditioning wholesalers have been appointed by the company. They are:

Jordan Supply Co., Buffalo; **R. D. Marshall Co.,** Albany, N. Y.; **Coleman Electrical Co.,** Brooklyn; **Lincoln Supply Co.,** Syracuse, N. Y.; **Ace Refrigeration Supplies, Inc.,** Miami, Fla.; and **Harry F. Haldeman, Inc.,** Los Angeles.

Amana Products Corp., Long Island City, N. Y., has been named to distribute Perfection ranges, water heaters, and space heaters.

Perfection now has 75 furnace and air conditioning equipment distributors and 45 appliance distributors.

EMERSON ELECTRIC MFG. CO.—**Graybar Electric Co.** branches in Los Angeles and Atlanta have been named room air conditioner distributors.

AMERICAN GAS MACHINE CO., DIV. OF QUEEN STOVE WORKS, INC.—Appointment of two new distributors has been announced.

Conditioned-Air, Inc., Houston, Texas, has been named distributor in that area.

Carbonic Machines, Inc., Minneapolis, will handle the firm's full line in that area.

DRAYER-HANSON, DIV. OF NATIONAL-U. S. RADIATOR CORP.—**Pancho Ivanoff,** Montevideo, Uruguay, has been named exclusive distributor in that country.

new KRACK air cooled condenser

Now available in capacities up to 30 tons.
No need to use an oversize condenser.

Special Features

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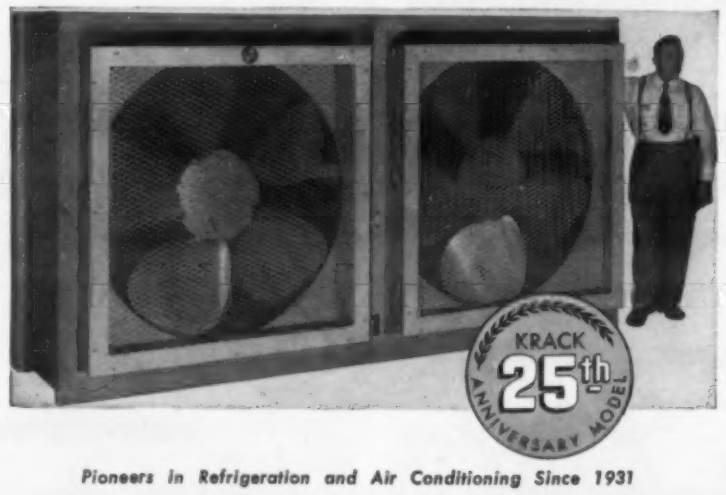
2. Semi-automatic belt adjustment
3. Counter-flow refrigerant circuiting
4. Minimum maintenance
5. Multi-circuiting at no extra cost



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Pioneers in Refrigeration and Air Conditioning Since 1931

For more information about products advertised on this page use Information Center, page 24.

Toledo Heating Contractors Complain Gas Utility Night Employes Refer Calls to 'Unethical' Firm

TOLEDO—A group of heating contractors complained that one or more night employes of Ohio Fuel Gas Co. had been referring customers to a furnace concern accused of unethical sales tactics.

Four representatives of the Toledo Warm Air Heating Contractors Association made the charge at a meeting with I. A. Ludwig, vice president and district manager of Ohio Fuel Gas, and two other officials of the gas company.

Kenneth Epperson, president of the contractors association, said there was evidence that persons calling Ohio Fuel Gas for emergency service at night often were referred specifically to Gas Appliance Service, Inc., 529 S. St. Clair St.

SERVICE FIRM EXPELLED FROM ASSOCIATION

Gas Appliance Service was expelled from the contractors association Feb. 14 after several Toledo residents complained that the firm used "scare tactics" in selling or attempting to sell them equipment or repairs that were not necessary.

Both Ludwig and Harry Cordwin, head of Gas Appliance Service, who was questioned by a reporter afterward, acknowledged that a night serviceman at Ohio Fuel Gas also was employed by his firm.

Cordwin added, however, that any charge that his firm had used an Ohio Fuel Gas employe to get customer referrals was "a deliberate falsehood."

It would be "bad practice" and contrary to company policy if an Ohio Fuel Gas dispatcher recommended a specific company to a customer calling at night, Ludwig said.

After the meeting, he said he did not believe either dispatchers, who answer the phone calls, or servicemen, who are sent out to homes, had engaged in such practices."

Ludwig promised a continuing investigation to determine whether any Ohio Fuel Gas employes had violated rules in such fashion. So far, he said, "we haven't been able to ferret out anything."

Walter Weirick, service manager of the gas company, explained that as a result of complaints two years ago, the company's dispatchers were told to refer callers who wanted heating service to the classified pages of the telephone directory. That policy remains in effect, he said.

PHONE ANSWERING SERVICE PLANNED

Ludwig suggested that the heating contractors' association establish a central telephone number for night calls. The gas company dispatchers then could refer customers to that number for heating service, as well as to the classified directory.

Epperson announced after the meeting that the association would retain a phone-answering service for this purpose. It will inform persons calling at night what firms are available for the necessary emergency heating service.

Offers 'Push-Button' Heating Sales Plan

CONSHOHOCKEN, Pa. — "Push-Button Selling for a Push-Button Era" is the theme of a broad new marketing campaign now being initiated by John Wood Co.'s Heater & Tank Div.

Encompassing all aspects of advertising, sales promotion, and merchandising, the plan has been tailor-made to fit the needs of the firm's wholesaler's, plumbers, and dealers, as determined by the findings of a recent survey of John Wood customers, according to W. Glenn Oslin, vice president and general sales manager of the division, states in announcing the program.

An important part of the program, the "Push Button Sales Aid" kit, offers a selling plan consisting of service stickers, printed match books, cut-outs of water heaters for mail and bill enclosures, a consumer folder, pilot lighters, plumber letterheads and suggested sales letters, newspaper advertising mats, "Authorized Dealer" window decals, window and in-store displays, and John Wood catalog data.

Separate kits are available for both John Wood automatic water heaters and "Fluid Heat" automatic home heating equipment.

Columbus Heating Firm Outgrows Old Quarters

COLUMBUS, Ohio—Ohio Furnace Co. has moved into its new office and warehouse headquarters at 1003 Kinnear Rd., General Manager E. L. Wagstaff announced recently.

The 12-year-old heating and air conditioning distributor outgrew its previous quarters and is now located in a brand new building along Kenny and Kinnear Rds.

The $200,000 fireproof building is erected on a three-acre tract of land recently acquired by the company.

Wagstaff explained that the move was necessitated "by the tremendous increase in sales volume of heating and air conditioning equipment and component parts the firm distributes in 45 counties of this midwestern state."

American Furnace Co. Offers $1,200 Yearly Scholarship

ST. LOUIS—Establishment of an American Furnace Co. Foundation Scholarship for a first-year student at Washington university was announced by Dean Arno J. Haack, chairman of the scholarship committee.

A grant of $1,200 for the academic year 1957-58 has been made with the intention of renewal of the scholarship each of the four years the winner is at the university.

When the plan is in full operation, four awards will be provided annually.

Candidates for the award must be graduates of the Red Bud, Ill. public high school. In the absence of candidates from Red Bud, where the firm's manufacturing plant is located, students from Missouri will become eligible.

PRESENTING the keys to salesman John D. Wilson is C. C. Whitcomb, president of Kalamazoo Furnace & Appliance Mfg. Co. while Paul B. Stowell and John Niewoonder wait to receive keys to other units of the "Flying Squadron."

Installs 'New Look' In Promotion, Uses 'Flying Squadron' of Station Wagons

KALAMAZOO, Mich. — The Kalamazoo Furnace & Appliance Mfg. Co. here has inaugurated a "new look" in sales promotion by presenting brightly painted and distinctively marked station wagons to its field sales personnel.

These bright red-and-white station wagons will be known as the "Flying Squadron," according to C. C. Whitcomb, president of Kalamazoo Furnace, and will be used to promote the company's full line of gas, oil, and coal-fired warm air conditioners at both distributor and dealer levels.

"The program of helping the distributor secure dealers is not new with Kalamazoo," it was pointed out.

After the appointment of a new distributor and upon arrival of the first carload of equipment, the Flying Squadron, of from two to four units, will contact the list of leading dealers in the distributor's territory. This is done alone or with the distributor's salesman. This system "improves the earnings of the distributor."

Cutaways and displays of Kalamazoo products will be carried inside the Flying Squadron units for demonstration purposes and the side windows will be used for advertising individual distributors and dealers as the occasion arises.

REPRINTS

COMPARISON OF REFRIGERANTS 12-22.

By Paul Reed—Only 75¢ ea. Clip this ad and mail with your name and address to: Air Conditioning & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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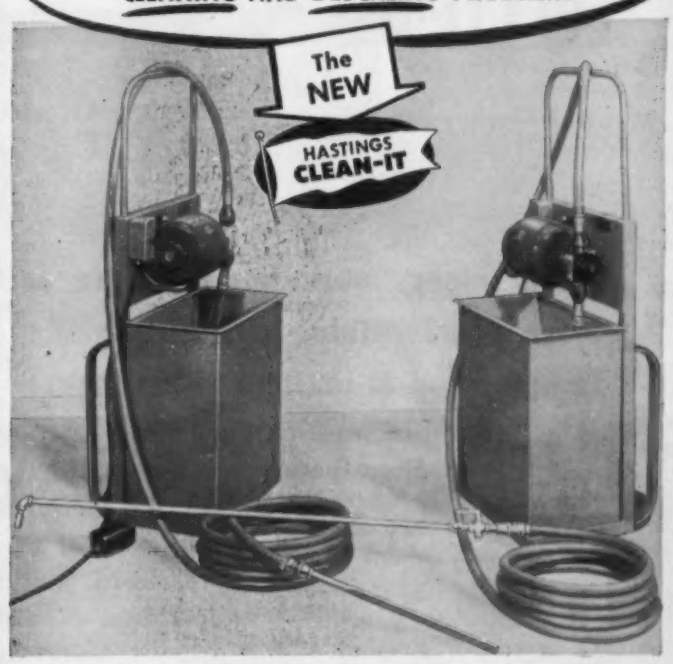

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HASTINGS CLEAN-IT

Eliminates the hazards and mess of old-fashioned cleaning methods
UNCONDITIONALLY GUARANTEED

Write for Prices and Bulletin AC-47-C2

HASTINGS AIR CONTROL, INC. 3215 Leavenworth Omaha 5, Nebraska

CORROSION

The experienced refrigeration and air conditioning serviceman is familiar with the fundamental principles of several trades and professions. Familiarity with the basic principles of corrosion chemistry can serve as an added valuable tool in his work.

This series of articles by Frank J. Versagi, chief chemist, Mueller Brass Co., will also delve into the causes and effects of corrosion in refrigeration and air conditioning systems. Part I of the series was concerned with chemical corrosion. Part II dealt with electrochemical corrosion. Part III dealt with electrochemical corrosion where electrolysis is involved. Parts IV and V will deal with the role of water in corrosion.

Part 4—Role of Water In Corrosion

(In Two Parts)

By Frank J. Versagi, Chief Chemist, Mueller Brass Co., Port Huron, Mich.

In our discussion of corrosion by chemical action, by galvanic action, and by electrolysis, we saw that a liquid or film—usually one which is capable of conducting electrical current—must always be present.

Copper plating depends upon a liquid to accomplish the transfer of copper from some tube to a polished steel bearing not in actual contact with the tube. Unused solder flux will attack the metal underneath it.

There was the example of the use of a sacrificial magnesium electrode to protect underground pipes; in this case the moist ground serves as the electrolyte. When metals are attacked by brine, liquid's role is obvious.

'WATER CAN CONTRIBUTE GREATLY TO CORROSION'

By its nature, water can contribute greatly to most types of corrosion. Because it easily dissolves or absorbs solids, liquids, and gases, water can become active both chemically and electrolytically.

We will leave for another time the discussion of what actually happens when small amounts of water enter a system. This discussion will concentrate on water in gross amounts—as in supply lines, cooling towers, and evaporative condensers.

The refrigeration serviceman will never encounter truly pure water as does a chemist in a laboratory. All natural waters contain some dissolved minerals or gases. City water, sometimes treated to remove certain substances, will have other chemicals added.

'PURE WATER CAUSES MORE TROUBLE THAN NORMAL WATER'

It is not unfortunate that pure water is not available, for it would cause even more trouble than normal water. Distilled or de-ionized water will attack most metals and will even attack glass.

For this reason, fully softened or "dead soft" water is not recommended for most commercial applications.

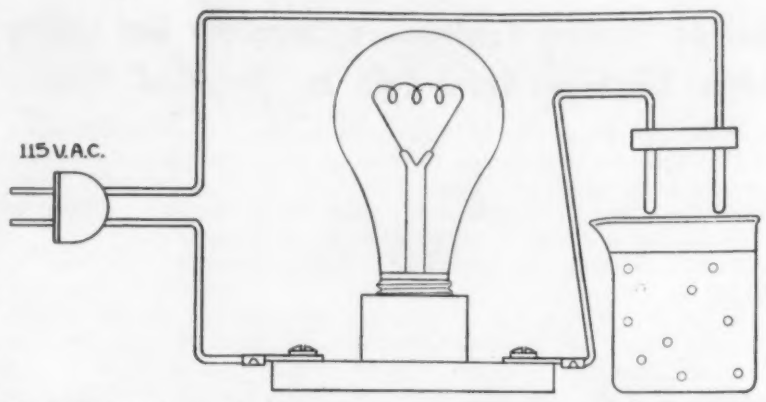

FIG. 1: If electrodes in this simple apparatus are immersed in plain water nothing happens. Add a pinch of salt to the water and the lamp will light; add more and the lamp will glow brighter.

In water, both chemical and electrochemical corrosion can take place, and most frequently the two types occur simultaneously.

For the refrigeration man and the plumber one of the chief troublemakers in water is oxygen or air. It is next to impossible for normal water supplies not to contain dissolved air—air which may have entered during purification, while the water was traveling from its source, or while the water was stored prior to pumping.

Some waters, of course, contain more air than others, but the refrigeration serviceman adds to his potential troubles by exposing the water repeatedly to air in some of his operations like a cooling tower.

OXYGEN'S POWER IN CORROSION

The power of oxygen in water to begin or accelerate corrosion is pointed out by the fact that many times two waters of almost identical mineral contents will exhibit completely different corrosive tendencies. One will cause service lines and condensers to fail; the other will not.

New methods of chemical analysis have shown the difference to be due to the presence or absence of oxygen. Generally speaking, water with high oxygen content is more corrosive than those with lower content.

Unfortunately, when samples of water are submitted for chemical analysis, they are often shipped in such a way that the dissolved oxygen escapes before the sample reaches the laboratory to be tested.

To avoid this, always completely fill the sample bottle with water so that some spills over when the stopper is inserted. Keep the sample as cool as possible and have the analysis performed quickly—within hours if possible, within a couple days at the longest.

The ability of oxygen in water to destroy metals is illustrated clearly by the frequent destruction of radiators, pipes, and tubes in hot water or steam systems where air has leaked into the system.

In a cooling tower or similar application, the same principles

(Continued on next page)

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For more information about products advertised on this page use Information Center, page 24.

Role of Water In Corrosion--

(Continued from preceding page)

apply although the destruction will proceed more rapidly at the temperatures of the heating systems.

Let's assume we are starting out with a completely clean condenser—a system with a roof cooling tower in a rural area where the air is not contaminated by chemical gases.

When the very first water containing a large amount of air strikes the clean metal pipes, a thin oxide coating will tend to form. As pointed out in a previous article, if the oxide film remains unbroken, the base metal is protected from further corrosion.

PIPE THINS

If, however, the thermal expansion and contraction of the pipe or if the flow of water is so turbulent as to prevent any of the oxide to adhere to the base metal, corrosion is possible. The same danger exists if the oxide has at first adhered to the metal, but is later broken by such mechanical actions as those above.

Since some bare metal is still exposed to water and oxygen, more oxide will form. Whenever an oxide or any other chemical compound is formed, some of the metal leaves the pipe.

If this process of oxide formation is allowed to continue indefinitely because no protective layer builds up, the pipe will become thinner and thinner until it fails.

Most frequently this thinning occurs in fairly small areas because the rest of the pipe is protected by some oxide coating. In such cases the pipe will develop pin holes.

To vertify this point we inserted two metal pipes—one into each of two glass tubes. The pipes were cut so as to expose parts of their inner diameter. One tube was bent so as to offer a change in direction for the water passing through it.

Into one tube we passed water evenly; in the bent tube we passed it rapidly and with frequent stops and starts in flow. Oxygen at controlled rates was bled into each tube.

Over a period of months, the first tube developed a fairly even coating of oxide. The second, and bent tube was similar in appearance except that the scale was broken at spots. Microscopic examination showed that there were several pits already on their way toward perforating the bent tube.

Not infrequently a laboratory will analyze and label aggressive a water from a unit which has failed. In the field, however, there will be a dozen units using the same water but which have not failed.

A FACTOR IS PIPING FLOW CHARACTERISTICS

While there can be other reasons, one important factor may be the flow characteristics of the piping system. Too rapid or too turbulent a flow can prevent the buildup of a protective coating on the pipe—especially at changes of direction.

Unfortunately, one of the most effective means of removing oxygen from water—by flushing the water supply with an inert gas like nitrogen—does not lend itself to refrigeration applications.

Chemicals which will remove oxygen can be added to the system, either at various intervals or continuously in metered amounts. Frequently, where it is inconvenient or uneconomical to use chemicals to remove oxygen from the system, chemicals are added which will cover the metals with a protective coating through which the oxygen in the water cannot penetrate.

Carbon dioxide, the gas which can be used as a refrigerant or to make soda pop, is the other gas most commonly found in natural waters. When dissolved in water, carbon dioxide forms carbonic acid, not a very strong acid, but one capable of causing considerable corrosion.

Generally speaking, the mechanics of carbonic acid corrosion are similar as those with oxygen in water. In both cases the corrosion begins chemically, then proceeds by electrolysis, with the metal acting as the dissolving anode and the corrosion product acting as the cathode.

The easiest way to tell if carbon dioxide has been at work on metal tubes is to scrape out part of the corrosion products and add a little hydrochloric acid. The corrosion products will dissolve and bubble if carbonates are present.

In heavily industrial areas, water exposed to the atmosphere may pick up highly corrosive chemical gases like hydrogen sulfide and sulfur dioxide or oxides of nitrogen. In the presence of, or dissolved in water, such gases generate strongly corrosive compounds.

PREVENTIVE MAINTENANCE IS 'PRACTICAL CURE'

Excessive exposure to such compounds will cause rapid failure of metal systems carrying water, and the only practical cure is preventive maintenance —periodic treatment or occasional breakdowns and cleanups. Of course, outside surfaces exposed to such moist corrosive gases may fail from the outside.

Most natural waters will contain, in addition to dissolved gases, many dissolved minerals. Some of these minerals tend to separate from water under certain conditions and form scale; others may remain in solution and contribute to corrosion by increasing the electrical conductivity of water.

Chlorides and sulfates are examples of these kinds of salts. (Chlorides are chemical compounds containing chlorine—like table salt, sodium chloride; sulfates are compounds containin gone type of sulfur acid, like epsom salts, magnesium sulfate.) Where galvanic acid is taking place, the presence or absence of these dissolved minerals can make the difference between the stopping of the chemical action and failure of the system.

To illustrate this point: If the electrodes in the simple apparatus in Fig. 1 are immersed in plain water, nothing happens. Add just a pinch of salt to the water and the lamp will right; add more salt, and the lamp will become brighter.

This happens because the addition of the salt makes the water a better conductor of electricity. This same phenomenon occurs, but at much smaller voltages, during electrolysis.

Because of the high electrical conductivity of brine solutions, galvanic action is a definite danger where unlike metals are in contact. The use of caustic soda in brine reduces the danger.

(To Be Continued)

Men on the Move . . .

Westinghouse Electric Corp.—JOHN G. FEICK, JR. was appointed assistant to BRUCE D. HENDERSON, vice president-air conditioning division, and will have charge of budgeting, division planning, management of division controls, and other duties. He has been executive staff assistant, general products headquarters.

Hussmann Refrigeration, Inc.—Promotion of DAN BELL, JR. as branch manager in Dallas has been announced. He formerly was a distributor for National Packing Co.

RAY G. ROESLER has been named division manager in the Dallas area. He has been branch manager of the Oklahoma branch.

General Electric Co.—WILMER P. HAUCK has been appointed manager-manufacturing of the Low Voltage Switchgear Dept. He has been manager-manufacturing of the Automatic Blanket & Fan Dept. He succeeds C. BENJAMIN RAMSDELL, now general manager of Commercial & Industrial Air Conditioning Dept.

Kelvinator Div., American Motors Corp.—MACK E. BAILEY, JR. has been named manager of the Houston branch of Refrigeration Discount Corp., appliance sales financing subsidiary of Kelvinator. He succeeds A. L. SCHULTZ who resigned. Bailey had been Houston assistant branch manager.

Wolverine Tube Div., Calumet & Hecla, Inc.—DEL E. WESSELS has been appointed technical sales representative in the Oklahoma and north Texas areas. He formerly was technical office sales representative in Wolverine's general sales office, Detroit. He will headquarter in the Houston office.

Utility Appliance Corp.—JOHN L. HALL, director of contract division, has been named manager of sales for southern California. He wil continue his sales promotion activities in the contract division.

E. J. "DUTCH" FREISE has been promoted to the post of factory representative for Texas except the El Paso marketing area. He has been working out of Dallas since 1954 and now will be in charge of sales and promotion for air coolers, furnaces, air cnditioners, hot water heaters, and Gaffers & Sattler automatic gas ranges.

Amana Refrigeration, Inc.—J. DAVID CATHCART, formerly president of Federal Distributing Co., Inc. of Des Moines and Davenport, Iowa, has been named regional sales manager of the firm's new Philadelphia territory, which embraces all of eastern Pennsylvania, southern New Jersey, and Delaware.

Norge Div., Borg-Warner Corp.—Appointment of EDWARD B. KATE as district manager for Missouri and Kansas has been announced. He will be in charge of home appliance sales to distributors in Kansas City, Mo., St. Louis, Springfield, Mo., and Wichita, Kan. He was midwestern division manager with Apex Electrical Mfg. Co. before coming to Norge.

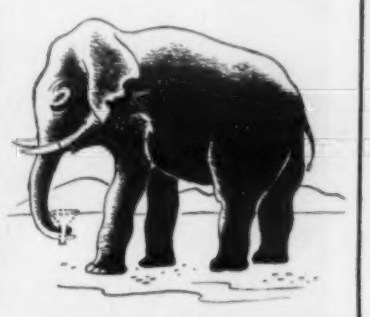
Philco Corp.—Appointment of MORGAN GREENWOOD as sales manager, home laundry equipment was announced. A special sales representative for the last year, Greenwood succeeds JAMES M. HUFNAGEL, resigned.

ROBERT C. DIGGES has assumed full responsibility for special sales. He was associated with Greenwood.

Gustin-Bacon Mfg. Co. (Kansas City, Mo.)—J. D. SIMMONS, executive vice president since 1947, has been elected president. He succeeds A. L. GUSTIN, JR., who became chairman, a new post.

L.O.F. Glass Fibers Co.—PAUL W. BURKMEYER, a sales trainee for the last six months, has been assigned to the Los Angeles sales office as a field representative for industrial sales.

No. 14 in a series on refrigeration



It is well known that a certain New England farmer, face to face with his first circus elephant, looked long and hard and then stated flatly—"Ain't no such animal."

Some people are slow to accept a fact. The elephant is a fact. It is also a fact that the elephant's nose, or trunk, is the most efficient nose known in the animal kingdom. Besides using the nose to sniff with, the elephant uses its nose to pick up peanuts. It can swat bees with its nose, and can squirt water through it. That nose is the significant and important component part —in an elephant.

Here at Recold Corporation we produce an extensive line of equipment used in refrigeration and in air conditioning. Among these products is our **Dri-Fan Evaporative Condenser.** Its component parts include one that is as essential to refrigeration efficiency as a trunk is to an elephant. It's a patented bleed funnel that bleeds off just the right amount of spray water and in so doing cuts down corrosion and scale deposit traceable to the minerals in the water.

The old approach to the corrosion and scale problem was by means of bleed tubes and/or expensive valves that quickly clog and lose effectiveness.

Only Recold's **Dri-Fan Evaporative Condensers** incorporate this important component part. For further and factual data write today to—

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There's no "guesswork" when you use Dean Cold Plates. They'll *always* give you top operating efficiency. Ideal for ice cream cabinets, locker plants, soda fountains, farm milk coolers, farm freeze cabinets, low temperature test rooms, frosted food refrigerators, window displays, food counters, refrigerated transportation and subzero applications for industrial chilling.

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Any way you want them . . . that's the way Dean will "job-tailor" your plates for you. Consider the savings this means in time and money. Available in zinc metalized steel, stainless steel and other metals. In cylinders, U's, angles, tanks, etc. Write NOW for that special, made-to-order plate you need.

Send For Technical Data Book giving information on Dean Cold Plates for various applications

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Where to find residential air conditioning dealers?

Today's key question in the residential air conditioning industry is being asked from every side: Who will sell the bulk of tomorrow's market? Appliance dealer, plumber, electrician or heating contractor? All have been mentioned but no single group has proven that they, above another, will control the market.

Truth is, some of all these groups will step forward as the air conditioning specialists of tomorrow. It depends entirely on each *individual's* determination to move ahead aggressively into the promising specialty of year-round residential air conditioning.

Meanwhile the problem: Amid this present dynamic development of distribution outlets the manufacturer is all but unable to identify his future volume dealer. Communication between product maker and potential seller is a challenge.

There is, however, one medium bridging this gap — AIR CONDITIONING & REFRIGERATION NEWS —— the only weekly newspaper of this industry, read and referred to by distributors and contractor-dealers alike. Each year, the NEWS invests tens of thousands of dollars to include in its circulation, the new individuals and the new corporations entering the field.

Whatever his past ties, the new contractor-dealer recognizes his dependence on the NEWS for the information he must have to be or to stay a successful residential air conditioning specialist. Because of this he pays to receive it. So the NEWS becomes the one medium able to bring you into contact with new distribution points as they emerge.

What better showcase for your selling message than in the one business paper that is seeking out and is finding the new residential air conditioning dealers? Advertise regularly in the NEWS.

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The Newspaper of the Industry

ABP ABC AUDITED PAID CIRCULATION

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NEW YORK, 521 FIFTH AVE., MURRAY HILL 2-1928-9, ROBERT M. PRICE.

CHICAGO, 134 S. LA SALLE ST., FRANKLIN 2-8093, AL SCHILDHAMMER.

LOS ANGELES, 4710 CRENSHAW BLVD., AXMINSTER 2-9501, JUSTIN HANNON.

DETROIT, 450 WEST FORT ST., WOODWARD 2-0924, J. B. SULLIVAN.

Western Show Program--

(Concluded from Page 1, Col. 5)

and installation problems of cooling systems. These conferences will be held at the Shrine Auditorium.

The conference on school air conditioning is being sponsored by an informal committee that has been set up in southern California to advise the State Board of Schoolhouse Planning concerning heating and ventilating matters. It will be moderated by Frank Neal, western director of the School Div., Minneapolis-Honeywell Regulator Co.

E. B. Hilton, chief engineer of C. W. Walz, consulting engineer; W. L. Donley, consulting engineer; Dale Briggs, western manager of Herman Nelson Div., American Air Filter Co.; John Leemhuis, vice president of Airfloor Co.; and Milton Wilton, general manager of Anemostat Corp., will analyze several different types of installations.

These will include a system using a central boiler and refrigeration plant, floor panel distribution systems, individual unit ventilators in each class room, and high velocity systems.

The other conference, on Tuesday night, will be put on by the National Association of Practical Refrigerating Engineers, under the direction of Ed Nelson, local educational chairman.

This session will include showing of slides of a number of refrigerating and accessory installations which have given operating trouble. The audience will be given an opportunity to analyze the trouble in the light of their experience with this type of problem.

Region 4 ASHAE Meeting Set for May 6-7

On Monday and Tuesday, May 6 and 7, Region 4 of the American Society of Heating & Air-Conditioning Engineers, which comprises the seven far western states, will hold its regional meeting, including two technical sessions, at the Ambassador hotel.

Opening the first technical session Monday morning will be a discussion on "Calculations Investigating the Application of Air Conditioning to a School," by Frank M. Neal, Minneapolis-Honeywell, and Donald L. Williams, Holladay-Westcott. Neal will make this presentation.

Other papers to be presented at this session are "Control of Air-borne Sound Transmission," by Jack B. C. Purcell, Bolt, Beranek & Newman, and "An Investigation of Filter Systems for Removing Irritants from Polluted Air," by Neil Richardson, Engineering Research, University of California at Los Angeles.

At the noon luncheon, Harold P. Hayes, dean of engineering, California State Polytechnic college, will speak on "Recruiting Personnel for Our Industry."

Scheduled for Monday evening is a banquet in recognition of past chapter presidents. P. B. Gordon, ASHAE president, will speak on "Our Bottleneck—Technical Know-how."

A symposium on "Air Conditioning of Existing Buildings" will be held Tuesday morning, with Cary B. Gamble, consulting engineer, as moderator. Subjects and speakers are:

"High Velocity Air Systems," C. Milton Wilson, Anemostat Corp.; "Individual Chilled Water Units," Albert Hanson, National Refrigerator Co.; "Individual Package Units," Frank White, Airtemp Div., Chrysler Corp.; "Weathermaster Systems," Maurice J. Wilson, Carrier Corp.; and "Conventional Air-Duct Systems," Clancy W. Pollock, Drayer-Hanson.

Luncheon speaker will be E. R. Queer, first vice president, ASHAE. His topic: "What Are Our Future Energy Sources."

Chapters regional committee meetings will be held Monday and Tuesday afternoons.

Early Model

CROSLEY ICYBALL refrigerator, a recent addition to the Recold Museum, will be displayed at the Western Show. Explaining the working parts of the unit to Darlene Hendricks is H. T. (Hy) Jarvis, founder of the museum and Recold president. A California State Polytechnic college exhibit will illustrate and explain the vital function education plays in the air conditioning and refrigeration field.

Exhibitors Listed

As of April 23, the following have contracted for space in the Western Exhibit either directly or through manufacturers' representatives:

Aeroquip Corp.; Air Distribution Products; Air Equipment Sales Co.; Air Factors, Inc.; Airfan Engineering Co.; Air-Maze Corp.; Air Products Co.; Air & Refrigeration Corp.; Alco Valve Co.; Allen Roof Exhausters; Allied Industries; Allied Masonry Anchors, Inc.; American Air Filter Co., Inc.; Anemostat Corp. of America; Automatic Devices, Inc.

Bahnson Co.; Barnebey-Cheney Co.; Bell & Gossett Co.; Bishop & Babcock Mfg. Co.; Brunner Mfg. Co.; Bryan Steam Corp.; Buensod-Stacey, Inc.;

C & S Equipment Co.; California Polytechnic College; Carnes Corp.; Cleaver-Brooks Co.; Coast Insulation; Comfort Air Sales; Continental Air Filters, Inc.; Cooling & Heating Engineers; Copeland Refrigeration Corp.; Crane Co.; Cyclotherm Div., National U. S. Radiator Corp.

Dawson & Co., Richard; DeBothezat Fans Div., American Machine & Metals, Inc.; Donaldson Power Ventilator Co.; Dunham-Bush, Inc.; Dust Control, Inc.; Dwyer Mfg. Co., F. W.; Edgewood Mfg.; Electro-Air Cleaner Co.; Elliott Engineering.

Fabling Industrial Supply; Farr Co.; Fedders-Quigan Corp.; Fenwal, Inc.; Fraser & Johnston; Friez Instrument Div., Bendix Aviation Corp.; General Air Conditioning Corp.; General Blower Co.; General Chemical Div., Allied Chemical & Dye Corp.; Goodfellow Co., Inc., E. D.; Gratiot Co., Jules D.

Heat & Power Equipment Co.; Heat-X, Inc.; Heating Equipment Mfg. Co.; Hess, Greiner & Polland; Holub Industries; Independent Nail & Packing Co.; Industrial Acoustics Co.; Industrial News; Insulation Engineering Corp.

Jackes-Evans Mfg. Co.; Jacuzzi Brothers, Inc.; Jenn-Air Products Co., Inc.; Johnson Service Co.; Kilbury Mfg. Co.; Koppers Co.; Krueger Air Conditioning Corp.; L-O-F Glass Fibers Co.; Laars Engineers; Lawler Automatic Controls, Inc.; Lennox Industries, Inc.; Littrell Hardware Lines; Lytle Corp., John W.

McQuay, Inc.; MMM, Inc.; Marley Co., The; Marshall Instruments, Inc.; Master Fan Corp.; Miracle Adhesives Corp.; Midco Registers & Grilles; Montgomery Brothers; Murray Corp.; National Heater Co.; Natural Gas Equipment Co.

Pacific Scientific Co.; Partlow Corp.; Peerless Electric Co.; Price & Rutzebeck; Prox Co., Inc., Frank; Prues & Associates, L. J.; Pyramid Instrument Corp.; Ramset Fastening System, Olin Mathieson Chemical Corp.; Raypak Boiler Co.; Recold Corp.; Refrigerating Specialties Co.; Rite Engineering & Mfg. Corp.; Russell Sales Co.

San Gabriel Boiler Works; Sausse & Co., M. W.; Shaw-Perkins Mfg. Co.; Smallcomb Electric Co.; Smith Corp., A. O.; Southern Counties Gas Co.; Stewart Mfg. Co., Inc.

Tecumseh Products Co.; Tennity & Co.; Thermal Engineering Corp.; Thermal Products, Inc.; Thieme Construction Co.; Thrush & Co., H. A.; Titus Mfg. Co.; Tork Time Controls, Inc.; Typhoon Air Conditioning Co.; Utility Fan Corp., Div. of Utility Appliance Corp.

Valley Home Insulation; Vulcan Electric Co.; Warburg Co., Ed; Water Chemists, Inc.; Western Asbestos Co.; Western Tool Distributors; White-Rodgers Electric Co.; Wiegand Co., Edwin L.; Wiremold Co., The; Yancy Co.; Ziegler Steel Corp.

Apprentice--

(Concluded from Page 1, Col. 3)

mended its adoption and received authorization from UA officials. This recommended course will be used immediately in the New Jersey joint training program, Kromer said. It will be expanded and revised as experience requires.

Text and reference books have been selected. Teacher aids and plans, charts and recommendations on classroom equipment, etc., are being prepared by the Apprentice Training Div.

The course and recommendations are available to local unions through the Apprentice Training Div. and to local contractor groups through the National RACCA office.

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

NOTICE TO SMALL FIRMS

Purchasing and Contracting Office, Fort Eustic, Va.
AIR CONDITIONING of six (6) Classrooms, Bldg. P-2850, Fort Eustis, Warwick, Va.—Job—IFB TC-44-019-57-137—Bid Opening 14 May 57.

ARMY

U. S. Property & Fiscal Officer for Washington, 5114 Steilacoom Blvd., S.W., Tacoma 99, Wash.
REHABILITATION OF HEATING SYSTEM, Bldgs. 2503 and 2504, Geiger Field Air National Guard Area, Spokane, Wash.—Job—IFB NG 45-113-57-14B—Bid Opening 14 May 57.

Purchasing and Contracting Div., Fort Riley, Kan.
REPLACEMENT OF EVAPORATIVE CONDENSERS in two Cold Storage Plants, Bldgs. Nr 530 and 531, Fort Riley, Kan.—Job—IFB AV 14-040-57-57—Bid Opening 1 May 57.

Omaha District Corps of Engineers, 1709 Jackson St., Omaha 2, Neb. Attn.: Const. Div.
HEATING SYSTEM ADDITION, Grand Forks AFB, Grand Forks, North Dakota. The work will include the following approximate quantities: (a) 6,400 l.f. HTHW underground conduits, supply and return mains and laterals; (b) 955 l.f. HTHW above ground supply and return distribution mains—Job—IFB ENG-25-066-57-94—Bid Opening 15 May 57 (Grand Forks, North Dakota)—Drawings, specs., and bid forms will be furnished by above office, no deposit required.

Purchasing and Contracting Office, Fort Lesley J. McNair, 4th and P Sts., S.W., Washington 25, D. C.
REFRIGERATION AND FROZEN FOOD DISPLAY CASES—Items—IFB MDA 49-069-57-2—Bid Opening 17 May 57.

NAVY

U. S. Naval Air Station, Corpus Christi, Texas.
The following items to be procured under IFB 216-155-57—Bid Opening 9 May 57.
PEELER, 1 ea.—ICE CREAM DEEP FREEZE, 1 ea.—COFFEE MAKER, 1 ea.—48 CUP PERCOLATOR, 1 ea.—DISHWASHING MACHINE, 1 ea.—MIXER, 1 ea.—RANGE, GAS, 1 ea.—MEAT SLICER, 1 ea.—4 SLICE TOASTER, 1 ea.—ROLL WARMER, 1 ea.—ICE MACHINE, 1 ea.—UNDERBAR REFRIGERATOR, 1 ea.—WATER COOLER, 1 ea.—SERVING TABLE, 1 ea.—SERVING TABLE, STAINLESS STEEL, 1 ea.—SERVING TABLE, Stainless Steel Salad Section, 1 ea.—40 cu. ft. refrigerator, 1 ea.—BAKER'S TABLE, stainless steel, 1 ea.—WORK TABLE, 1 ea.—BUTCHER BLOCK, 1 ea.—COOK'S WORK TABLE, stainless steel, 1 ea.—DEEP FAT FRYER, Gas, 1 ea.—TRUCKS, Rolling Dish Carts, 3 ea.—FLOOR MAINTENANCE MACHINE, 1 ea.—Underbar sinks and workboards, 1 ea.—COCKTAIL UNITS, 2 ea.—Bottle Box, 1 ea.

Officer In Charge of Construction, Long Beach Naval Shipyard, Long Beach 2, Calif.
AIR CONDITIONING FOR COMPTROLLER DEPARTMENT BLDG. Nr 53 consisting of installing a packaged air conditioning unit, cooling tower, steam heating coil and humidifier, all ductwork, diffusers, grilles and registers, and a complete control system, complete and ready for use, Long Beach Naval Shipyard, Long Beach 2, Calif.—Job—IFB 9862/57—Bid Opening 2 May 57.

Officer In Charge, Navy Purchasing Office, 180 New Montgomery St., San Francisco, Calif.
FURNISH AND INSTALL REFRIGERATOR, Walk-in-reach-in at Naval Air Station, Alameda, Calif.—Job—IFB 220-6286-P2-B—Bid Opening 3 May 57.

Officer In Charge, Navy Purchasing Office, 1206 So. Santee St., Los Angeles, Calif.
Furnish and install at Naval Air Station, San Diego ENCLOSURE HUMIDITY CONTROLLED AIR CONDITIONED 21 FEET WIDE x 30 feet long x 10 feet high to be similar and equal to New-Pre-Fab Air Conditioned Booth—1 ea.—IFB 123-823-57—Bid Opening 16 May 57.
REFRIGERATORS, ELECTRIC, domestic, size 10, Type I Spec. AA-R-211C revised—200 ea.—IFB 123-824-57—Bid Opening 16 May 57. Delivery to U. S. Naval Ordnance Test Station, Chinalake, Calif.

Navy Purchasing Office, 4th & Independence Ave., S.W., Washington, D. C. Attn.: SPF-1A.
AIR CONDITIONERS, 15,000 B.t.u. per hour, Spec. OO-A-372 of 26 July 51, Amend. 1 of 20 May 52—3 ea.—IFB 600-1790-57—Bid Opening 16 May 57.

AIR FORCE

Purchasing and Contracting Office, Patrick Air Force Base, Fla.
INSTALLATION OF AIR CONDITIONING SYSTEM, Bldg. 560—Job—IFB 08-606-57-355—Bid Opening 10 May 57.

Purchasing and Contracting Office, Selfridge Air Force Base, Mich.
REPLACEMENT AND CONVERSION OF HEATING EQUIPMENT at Selfridge Air Force Base, Mich.—Job—IFB 20-602-57-52B—Bid Opening 13 May 57.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 4, Business Service Center, 50 Seventh St., N.E., Atlanta 23, Ga.
AIR CONDITIONING JURY ROOM, Columbia, S. C., Court House—Job—IFB CR4-1630—Bid Opening 5-1-57.

Business Service Center, General Services Administration, Region 9, 49 4th St., San Francisco 3, Calif.
AIR CONDITIONING COURT SPACE, Topeka, Kan. Post Office—Job—IFB D C 254—Bid Opening 5-7-57.
WATER CONDITIONER INSTALLATION St. Louis, Mo. Post Office—Job—IFB D C 263—Bid Opening 5-7-57.

General Services Administration, Region 3, Business Service Center, 7th & D Sts., S.W., Washington 25, D. C.
Window air conditioners (IFB 3H-7451A-A)—60 ea.—$10,347—The Mathes Co., 1501 E. Broadway, Ft. Worth, Tex.

MARSH
Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.
PRESSURE GAUGES and Dial Thermometers for all services.
MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.
MARSH INSTRUMENT COMPANY
Sales Affiliate of Jas. P. Marsh Corporation
Dept. D., Skokie, Ill.

Do You Need FLOOR UNITS for CHILLED WATER?
NOW—attractive water coil units for use in air conditioned space . . .

Immediate Shipments from Stock

MODELS
Complete units as pictured — for direct discharge with 4-way air distribution grilles.
Basic units, less top section, for ducts.

CAPACITIES
Three sizes — from 3 to 15 tons. Air delivery 1200 to 5600 cfm.

COILS
All copper or aluminum fins. Highest efficiency for chilled or well water.

FEATURES
Insulated cabinets. Heating with hot water or steam. Quiet operation.

HASTINGS AIR CONDITIONING — The Fresh Air System

Water coil and DX air handling units—Up to 24,000 cfm. Shipments from Stock on All Sizes.

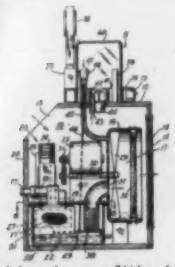
Write For Bulletin AC-47-W

HASTINGS AIR CONTROL, INC. 3215 Leavenworth Omaha 5, Nebraska

PATENTS

Week of Jan. 8 (Concluded)

2,776,553. PORTABLE AIR CONDITIONER AND CLEANER. Charlie Williamson, Joliet, Ill.

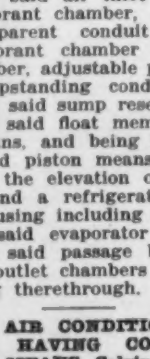


1. A portable air conditioning device comprising a housing, partition means in said housing defining an air inlet chamber and an air outlet chamber, said housing having respective air inlet and air outlet apertures communicating respectively with said air inlet and said air outlet chambers, a blower fan in said air outlet chamber arranged to force air out of said outlet aperture, a sump reservoir in the lower portion of said housing, conduit means connecting said sump reservoir to said air inlet chamber and said air outlet chamber and defining a passage between said inlet and outlet chambers, a transparent deodorant chamber on said housing, an air intake conduit connecting said air inlet chamber to said deodorant chamber, an upstanding transparent conduit connecting said deodorant chamber to said air inlet chamber, adjustable piston means in said upstanding conduit, a float member in said sump reservoir means connecting said float member to said piston means, and being arranged to control said piston means in accordance with the elevation of said float member, and a refrigerator mounted in said housing including an evaporator unit, said evaporator unit being located in said passage between the inlet and outlet chambers to cool the air passing therethrough.

2,776,554. AIR CONDITIONING APPARATUS HAVING CONDENSATE DISPOSAL MEANS. Calvin D. Pigman, Lyndon, Ky., assignor to General Electric Co.

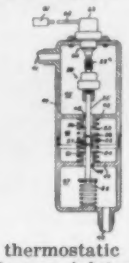
1. In a self-contained unit for conditioning a room, an evaporator, means for blowing a stream of room air over said evaporator to cool said air and condense water vapor therefrom, a sump for collecting the water condensed on said evaporator, a condenser, a centrifugal blower having vertical blades, means rotatable about the vertical axis for blowing a stream of outdoor air over condenser, said blower means being positioned above at least a portion of said sump, and at least one lifting tube mounted on said blower means for introducing the condensate water from said sump into said stream of outside air upstream from said condenser, said lifting tube extending downwardly from the inside of said blower means into said sump with the lower end of said tube being spaced inwardly from the air moving blades of said blower means and the upper end of said tube being within said blower and adjacent said blades, whereby upon the rotation of said blower means said tube lifts said condensate water from said sump by centrifugal action and expels said water into the stream of outside air flowing through said blower means.

2,776,792. DEVICE FOR STORING FROZEN FOOD PACKAGES. Warren R. Pearson, North Muskegon, Mich., assignor to Borg-Warner Corp., Chicago, Ill.



1. A rack for tiering frozen food packages of different sizes in adjacent but separate stacks, said frozen food packages having a tuck edge, said racks comprising a base, an upstanding post carried by said base, means defining a handle carried by the upper regions of said post, a plurality of generally inverted U-shaped retaining members each defining legs with the looped portion thereof having an aperture adapted to receive adjacent portions of the upstanding post, said retaining members being carried by said upstanding post for sliding relationship therebetween, and the legs of said retaining members being respectively inserted in the tuck edges of said frozen food packages to maintain said packages in stacked relationship with respect to said rack.

2,776,796. HEATING AND COOLING CONTROL VALVE. Neal J. Mosely, Mount Lebanon, Pa., assignor to Detroit Controls Corp., Detroit, Mich.



1. In a thermostatic valve, a valve casing having an inlet and and outlet, a pair of valve seats defining valve ports within said casing, said valve ports being spaced from each other, valve means positioned between and cooperable with said valve ports to control flow through said casing, thermostatic means responsive to external temperature for operating said valve means to open one of said valve ports; said thermostatic means including an operating member having two points of operating engagement with said valve means, one causing one of said valve ports to be opened, and the other causing the other of said valve ports to be opened; and thermostatic means operable to shift the relation of said operating member to said valve means in accord with the temperature of the fluid passing through said valve so that one of said points of engagement is established for a heating fluid and the other for a cooling fluid.

2,776,866. REFRIGERATOR SHELVING ARRANGEMENT. George C. Harbison, Erie, Pa., assignor to General Electric Co.

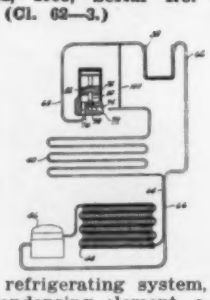
In refrigerating apparatus having a refrigerated storage compartment and a door providing access to said compartment, a shelving arrangement comprising a plurality of horizontal storage shelves mounted in said compartment with each shelf being less in depth than the shelf next below thereby to expose to access articles placed on the lower shelf, and a storage receptacle and at least one horizontal door shelf mounted on said door and extending into said storage compartment with said receptacle being positioned beneath said one door shelf and being less in depth than said one shelf, said receptacle having movable mounting means including a plurality of pivoted links supporting said receptacle from said one door shelf and effective to swing said receptacle out from beneath said shelf thereby to provide access to said receptacle, and said receptacle and said one shelf being complementary to different ones of said storage shelves and together therewith forming storage levels extending substantially across said storage compartment, whereby the ready access to the articles placed on said storage shelves is accomplished without loss of storage space within said compartment.

Week of Jan. 15

2,777,295. CONCRETE RESERVOIR FOR LIQUEFIED GASES. Lyman A. Bliss, New York, and Peter M. Riede and John H. Beckman, Kenmore, N. Y., assignors to Union Carbide & Carbon Corp., a corporation of New York. Application Sept. 12, 1952, Serial No. 309,306. 9 Claims. (Cl. 62—1.)

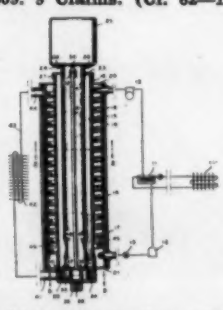
2. In a double-walled storage container for liquefied gases at low temperatures the combination comprising inner vessel substantially vertical side walls of pre-stressed reinforced concrete; a horizontal relatively thick flooring comprising heat-insulating material having substantial compressive strength, the vertical side wall being supported upon the peripheral portions of said flooring; a sheet-metal floor liner supported by the flooring, said floor liner having an upwardly extending sheet-metal peripheral flange adjacent said side wall; a horizontal continuous carbon steel bar imbedded and secured in the inner surface of said concrete side wall, said bar being a short distance of at least 6 inches above said sheet-metal floor liner; and the upper edge of said peripheral flange being secured gastightly to said bar by welding.

2,777,297. TWO EVAPORATOR REFRIGERATING SYSTEM. Ralph W. Doeg, Detroit, Mich., assignor to Nash-Kelvinator Corp., Detroit, Mich., a corporatiin of Maryland. Application July 21, 1953, Serial No. 369,307. 1 Claim. (Cl. 62—3.)



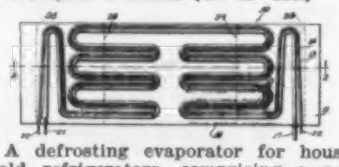
In a refrigerating system, a refrigerant condensing element, a relatively low temperature refrigerant evaporator having an inlet connected to said condensing element and having an outlet, a relatively high temperature refrigerant evaporator having an outlet connected to the inlet of said relatively low-temperature evaporator and having an inlet connected to said condensing element, a pressure differential valve interposed in the refrigerant circuit between the outlet of said relatively high temperature evaporator and the inlet of said relatively low temperature evaporator acting to maintain a predetermined pressure differential between said evaporators, and a small diameter tube by-pass having a flow capacity less than the flow capacity of said valve connecting less than the flow capacity of said valve connecting the outlet of said relatively high temperature evaporator to the inlet of said relatively low temperature evaporator.

2,777,298. VEHICLE AIR CONDITIONER. John B. Duty, Abernathy, Tex. Application Aug. 11, 1953, Serial No. 373,609. 9 Claims. (Cl. 62—117.)



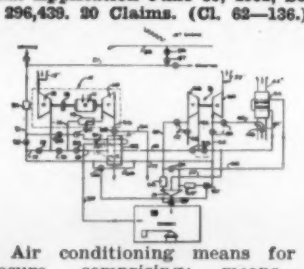
1. A refrigeration system comprising connected refrigerant translating, condensing, expanding, and evaporating elements, said evaporating element comprising a vertical coil, a first cylinder surrounding said coil, a second cylinder mounted axially within said coil, said cylinders extending beyond the ends of said coil, means enclosing the space between said cylinders, a tube extending axially of and within the inner cylinder, means for supporting said tube on the upper end of the inner cylinder, a motor mounted on the upper end of said tube, a stub shaft extending downwardly from said motor, a drive shaft extending downwardly within said tube, means coupling said stub and said drive shafts, an impeller mounted on said drive shaft and beyond the lower end of said tube, flange means extending from the lower end of said tube in proximity to said inner cylinder and spaced therefrom, said flange means extending laterally inwardly of said tube and defining an opening, said drive shaft extending through said opening, said opening defining the intake to said impeller, enclosure means for the lower end of said inner cylinder, said enclosure means having bearing guide means for said shaft, discharge means for said impeller extending through the lower end of said inner cylinder and beyond said outer cylinder, the lower portions of said inner cylinder and said tube being provided with openings for the passage of fluid from the space between the inner and the outer cylinders to the impeller, conduit means extending from the discharge means of the impeller to heat transfer means for the space to be cooled, and means connecting the heat transfer means to the upper portion of the space between the inner and outer cylinders.

2,777,300. SHEET METAL EVAPORATOR WITH HEATING MEANS. John S. Palmer, Evansville, Ind., assignor, by mesne assignments, to Whirlpool-Seeger Corp., a corporation of Delaware. Application July 14, 1952, Serial No. 298,683. 1 Claim. (Cl. 62—126.)



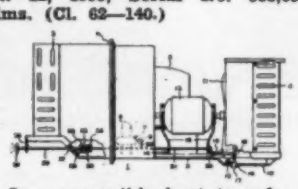
A defrosting evaporator for household refrigerators, comprising a pair of plates of substantially rectangular form, one of said plates being embossed outwardly to form one continuous larger groove, which is sinuous throughout its length and is closed by the other plate for a refrigerant conduit, said conduit including an open V-shaped formation at each end of the plate, each of which is joined to one of a pair of central sinuous formations, each having a plurality of center to end passes with U-shaped joining portions, and including a long pass joining the pair of central sinuous portions, one of said plates also having a smaller groove following and close to the side of said larger groove to form a continuous cavity for an electric heater, and a bendable, insulated electric heater located inside said smaller groove before the joining of said plates, and enclosed inside both sheets to spread its heat outwardly through the plates, for defrosting the entire evaporator quickly, the said plates being integrally secured together at all other areas except said grooves, and being bent to top open U shape, with inwardly extending attaching flanges at the top.

2,777,301. ALL-PURPOSE POWER AND AIR CONDITIONING SYSTEM. John Kuhn, Pacific Palisades, Calif., assignor to The Garrett Corp., Los Angeles, Calif., a corporation of California. Application June 30, 1952, Serial No. 296,439. 20 Claims. (Cl. 62—136.)



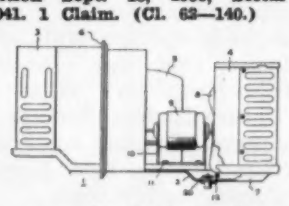
5. Air conditioning means for an enclosure, comprising: means for cooling and circulating air in a flow path including said enclosure; air expansion power means; and means for selectively connecting said air expansion power means in said path of flow upstream of said enclosure for one condition of operation and in said path of flow downstream from said enclosure for another condition of operation.

2,777,302. CONDENSATE SUMP DRAIN VALVE. William G. Spiegelhalter, Lawrence Park, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Sept. 12, 1955, Serial No. 533,650. 4 Claims. (Cl. 62—140.)



1. In a reversible heat transfer system for an enclosure, a compressor, a pair of complementary interconnected evaporator-condenser units, one inside and the other outside said enclosure each having valve connections with said compressor and selectively operable for heating and cooling said enclosure, condensate accumulating means associated with the outdoor units, and drain means operable during said heating cycle only to drain said condensate accumulating means.

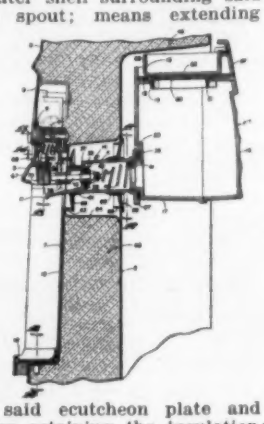
2,777,303. CONDENSATE SUMP DRAIN VALVE. John P. Slattery, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Sept. 13, 1955, Serial No. 534,041. 1 Claim. (Cl. 62—140.)



In a reversible heat transfer system for an enclosure, a compressor, a pair of complementary interconnected evaporator-condenser units one inside and the other outside said enclosure each having valve connections with said compressor and selectively operable for heating and cooling said enclosure, a condensate sump arranged beneath said outside unit, an opening in said condensate sump, a tubular, resilient, gasket containing a central bore positioned within said opening, a thermally responsive bimetal disc supported on said gasket in sealing engagement therewith, said disc flexing when the outside air drops to a predetermined temperature to permit condensate to drain through said passage.

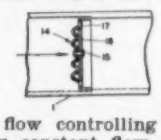
2,777,304. WATER DISPENSER FOR REFRIGERATOR. Alfred E. Nave, Cincinnati, Ohio, assignor to Avco Mfg. Corp., Cincinnati, Ohio, a corporation of Delaware. Application Dec. 9, 1953, Serial No. 397,192. 5 Claims. (Cl. 62—141.)

5. A water dispenser for installation on a refrigerator door having an outer shell, an inner liner, and insulation therebetween, said shell, insulation, and liner defining aligned openings therethrough, said water dispenser comprising a water tank, brackets secured to the liner for releasably supporting said tank; an inlet conduit pivotally secured to said tank for movement between an extended filling position and a closed position; a discharge spout secured to and projecting from said tank through the openings defined by the linner, insulation, and outer shell; an escutcheon plate secured to said outer shell surrounding said discharge spout; means extending be-



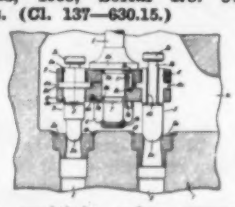
tween said ecutcheon plate and the liner for retaining the insulation; resilient sealing means on said spout for preventing ingress and egress of air past said insulation retaining means; valve means within said spout; and a pivoted spring-loaded pushbar on the exterior of said door in position to impart movement to said valve means.

2,777,464. FLOW CONTROL DEVICES. Neal J. Mosely, Mount Lebanon, Pa., assignor to Detroit Controls Corp., a corporation of Michigan. Application March 7, 1951, Serial No. 214,386. 3 Claims. (Cl. 137—516.13.)



1. In a flow controlling device for maintaining constant flow of a liquid independently of pressure variations, a conduit, a circular supporting member in said conduit having a plurality of flow apertures spaced around the periphery thereof, a resiliently elastic deformable member secured to said supporting member substantially centrally of said apertures, said elastic member being of corrugated construction and having a peripheral edge having a projected diameter less than that of said supporting member, and said elastic member being operable upon increase of fluid pressure thereagainst to be deformed toward a flattened condition against said supporting member and to expand diametrically to cause said peripheral edge to restrict said flow apertures.

2,777,466. VALVE MECHANISM. Franklin R. Ericson, Leominster, Mass., assignor to General Electric Co., a corporation of New York. Application Oct. 28, 1955, Serial No. 543,350. 3 Claims. (Cl. 137—630.15.)



1. A multiple valve comprising a housing defining a valve chamber and a plurality of outlet ports for discharging fluid from the valve chamber, each port having an inlet portion defining a valve seat, a plurality of unitary valve head members each comprising a stem portion with an enlarged seating portion at one end adapted to sealingly engage one of said valve seats, each stem having at its other end a second enlarged portion adapted to be contacted to move the valve head member to an open position, means for supporting and positioning the valve head members to regulate the flow of fluid through said outlet ports, said means comprising two plate members each defining a plurality of openings which are aligned and cooperate with corresponding openings in the other plate member to define pairs of cooperating openings in which the valve head stem portions are loosely supported, the diameter of the openings in each plate member being larger than the diameter of the adjacent valve head end portions, at least one lifting rod for moving the valve head members to open position, means securing the plates together and to the lifting rod, a longitudinally divided bushing disposed in each pair of cooperating openings in the plate members around said stem portions, and bushing and plates having cooperating abutting and interfitting portions to prevent both radial and axial displacement of the bushing portions relative to the plates, the diameter of the pushing bore being slightly larger than the valve stem whereby the valve head member is free to slide in the bushing bore and compensate for slight misalignment between the valve seat and bushing bore.

2,777,598. REFRIGERATOR CONSTRUCTIONS. Edward M. Gaul, Evansville, Ind., assignor, by mesne assignments, to Whirlpool-Seeger Corp., a corporation of Delaware. Application Sept. 14, 1953, Serial No. 379,767. 3 Claims. (Cl. 220—15.)

3. A breaker strip assembly for household refrigerators comprising an outer shell provided with a door opening at its forward end, said door open-

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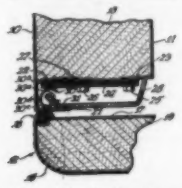
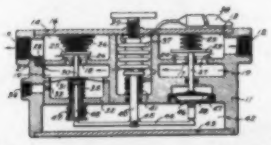
ing being bordered by an inwardly open flange arrangement having a rectangular groove therein, a liner in said shell and having an outwardly turned flange located backwardly of



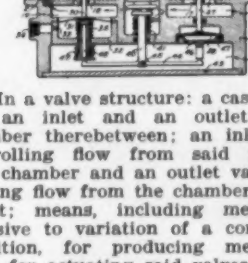
the front of said shell, insulation between said liner and shell, and insulating means for supporting liner from said shell, said flange arrangement including a face flange on the shell outwardly of said groove, a breaker strip comprising a member of uniform cross-section having a body adapted to traverse the space between the grooved shell and liner, said body having an inwardly extending flange on its inner side, said flange having its edge engaging the outwardly turned flange on the liner, said body also engaging behind said face flange and having an inwardly turned edge flange in said groove and a plurality of spring clips engaging over said edge, each spring clip having a U-shaped formation which clamps said edge and an integral C-shaped formation which is compressed between the rear of the face flange and said insulating means and tending to retain said breaker strip in said groove, the said insulating means comprising an integral frame of rigid insulating material secured to said shell and to said liner for closing the space in front of the insulation and effecting a rigid support of the liner.

2,777,639. VALVE STRUCTURE. Richard D. Grayson, La Canada, Calif., assignor to General Controls, Co., Glendale, Calif., a corporation of California. Application March 21, 1955, Serial No. 495,746. 8 Claims. (Cl. 236—48.)



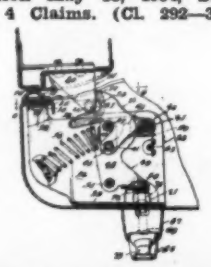
1. In a valve structure: a casing having an inlet and an outlet and a chamber therebetween; an inlet valve controlling flow from said inlet to said chamber and an outlet valve controlling flow from the chamber to said outlet; means, including means responsive to variation of a controlling condition, for producing mechanical force for actuating said valves; means for applying said force gradually to the valves and arranged so that when said condition varies in a given sense the inlet valve is opened before movement of the outlet valve in opening direction can be effected by said force, and the outlet valve is closed before the inlet valve is closed when the condition varies in the opposite sense; said chamber having a restricted opening leading to said outlet and bypassing the outlet valve so that when the inlet valve is open and the outlet valve is closed fluid can flow from said inlet to said outlet through the chamber and said restricted opening; means for supplying pressure fluid to said inlet; and a motor, operated in response to the change of fluid pressure in said chamber occurring upon closing and upon reopening of said inlet valve, for actuating said outlet valve independently of said force-applying means and of the inlet valve, said motor being arranged to effect opening of the outlet valve upon closing of the inlet valve, and delayed closing of the outlet valve upon reopening of the inlet valve; said means for applying said force to the valves being arranged so that it is capable of actuating the outlet valve to open position against the force of said motor.

2,777,721. REFRIGERATOR LATCH. William O. Burke and Robert S. Larson, Rockford, Ill., assignors to National Lock Co., Rockford, Ill., a corporation of Delaware. Application May 21, 1954, Serial No. 431,538. 4 Claims. (Cl. 292—332.)



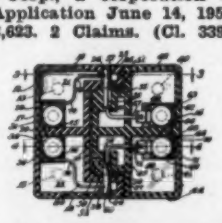
1. A refrigerator latch comprising a pivotally mounted latch bolt on a refrigerator door adapted to be rotated into and out of latching engagement with a keeper on a refrigerator cabinet, a supporting housing in the door, means for pivotally mounting the latch bolt at one end thereof in the housing and limiting its movement to rotation about said pivotal mounting means, a latch-engaging part on the other end of the latch bolt, a roller carried by the latch bolt intermediate its ends, means for spring-biasing said latch bolt to its cocked, unlatched position when the door is opened, and a spring-loaded cam member pivotally mounted intermediate its ends in the housing and having a cam face in contact with the roller and provided with a recess for receiving and retaining the roller and latch bolt in cocked, unlatched position when the cam member is rotated to release the latch bolt and the door is opened, a slot in one end of said cam member and a fixed pin projecting therethrough for limiting the arc of travel of said cam member, a slotted link pivotally mounted at one end in the housing, a pin in the other end of the cam member connected to the link through a longitudinal slot in the link, and an expansion spring carried by the link for spring-biasing the cam member and maintaining its cam face in contact with the roller.

2,777,722. LATCH CONSTRUCTION. William O. Burke, Rockford, Ill., assignor to National Lock Co., Rockford, Ill., a corporation of Delaware. Application May 18, 1954, Serial No. 430,476. 4 Claims. (Cl. 292—332.)



3. A latch construction comprising a rotatable latch member adapted to be rotated into and out of latching engagement with a keeper, a supporting housing, a latch operating member pivotally mounted adjacent one end in the housing and provided with an arcuate slot adjacent its other end, a compression spring engaging and spring-loading the other end of the latch operating member for biasing said latch operating member and moving the latch member into latching engagement, means for pivotally mounting the latch member in the housing for rotation about a fixed axis, toggle mechanism for connecting the latch operating member to the latch member and consisting of a toggle link pivotally connected at one end to the latch operating member and its other end movable over the latch operating member and this other end provided with a pin projecting into the arcuate slot and pivotally connecting this other end to the latch member, and means for rotating the latch operating member to compress the spring and move the toggle and latch member to unlatched and cocked position in which the pin in the arcuate slot is disposed at one side of a plane connecting the pivotal mounting for the latch member and the toggle link in the latch operating member, and trip means on the latch member for rotating the latch member, toggle link and pin from unlatched, cocked position to latching engagement in which the spring snaps the latch member into latching engagement and the pin is moved in the arcuate slot to the other side of said plane.

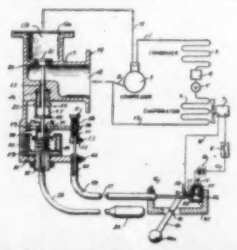
2,778,000. CONDUCTIVE HINGE FOR REFRIGERATOR DOOR. John R. Mills, Evansville, Ind., assignor, by mesne assignments, to Whirlpool-Seeger Corp., a corporation of Delaware. Application June 14, 1952, Serial No. 293,623. 2 Claims. (Cl. 339—4.)



2. In a hinge structure, a hinge butt comprising a substantially flat body portion having walls extending thereabout to form two compartments, portions of one of said walls being formed to have a cylindrical shape, two bearings, each of said bearings formed in one of said portions of said one wall, said bearings positioned longitudinally therein in a spaced apart relationship along a common axis, a pair of passageways, each of said passageways formed through one of said portions, each of said passageways positioned in said portions between one of said bearings and one of said compartments, a hinge leaf comprising a substantially flat body portion having walls extending thereabout to form two compartments, one of said walls of said hinge leaf being formed to have a cylindrical shape, a pair of openings formed through said one wall of said hinge leaf and positioned longitudinally therein in a spaced apart relationship along a common axis, each of said openings further positioned to open into one of said compartments of said hinge leaf, a pair of pins, each of said pins fixedly mounted in one of said openings and pivotally mounted in one of said bearings, said hinge butt and said hinge leaf further formed of a material which is a relatively poor conductor of electricity, a pair of covers, one of said covers mounted to abut said portions and to extend over the other walls of said hinge butt, the other of said covers mounted to abut said one wall of said hinge leaf and to extend over the other walls of said hinge leaf, electrical conductor means mounted in each of said compartments, said means being positioned and cooperating with said pins so that an electrical circuit is completed from one of said compartments of said hinge butt, through one of said pair of passageways, through one of said pins, to one of said compartments of said hinge leaf, and another electrical circuit is completed between the other compartment of said hinge butt, the other passageway of said pair of passageways, the other of said pins, to the other of said compartments of said hinge leaf, and mounting means extending from said flat body portion of said hinge butt and said hinge leaf for mounting said hinge structure to a cabinet and door.

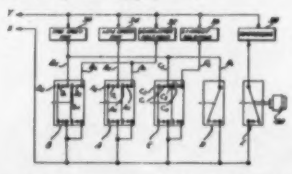
Week of Jan. 22

2,778,196. AUTOMATIC CONTROL APPARATUS FOR REFRIGERATION SYSTEM. William E. Davis, Houston, Tex. Application Aug. 18, 1952, Serial No. 304,895. 9 Claims. (Cl. 62—3.)



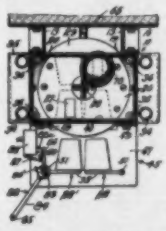
7. A refrigeration system comprising a compressor having a compression chamber in combination with a prime mover having duties requiring variable speeds of operation independent of the amount of refrigeration required, said compressor being connected to said prime mover to be driven thereby at speeds dependent on the speed of said prime mover, a condenser, evaporator, and expansion restricting means, means for connecting said units in series to form a closed refrigerating system, and a restricting means having an opening with a throat of such maximum size as to limit, regardless of the speed of operation of the compressor, the maximum flow of gas through the compressor to a predetermined maximum mass within the capacity of the compressor to handle and locate in the low pressure side of the system upstream from the compression chamber of the compressor.

2,778,197. ROOM AIR CONDITIONER CONTROL CIRCUIT. Thomas B. Logeza, Westchester, and Edward E. Modes, Chicago, Ill., assignors to The Dole Valve Co., Chicago, Ill.



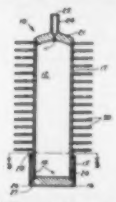
1. Control means for an air conditioning system which has fan means, ventilating means admitting ventilating air through said system, exhaust means providing exhaust by said system, and cooling means for cooling air passing through said system; comprising switch means operable by a single control member and adapted to energize said fan means, said ventilating means and said exhaust means; and a thermal element powered switch means adjustable by said single control member to set the operating temperature thereof and responsive to the temperature of the room being conditioned to establish a circuit adapted to energize said cooling means.

2,778,198. ICE MAKING MACHINE. Dudley E. Heath, Hastings on Hudson, N. Y., assignor to Servel, Inc., New York, N. Y.



1. An ice making machine comprising an ice freezing mold, a cooling element in thermal contact with the mold, a space below the mold for storing ice delivered from the mold, said mold being mounted for movement relative to the cooling element from an upright to an inverted position overlying the storage space, mechanism between the mold and space to intercept and hold the ice falling from the inverted mold and thereafter release ice to the storage space, and means connected to move the mold to inverted position and actuate the intercepting mechanism in timed relation.

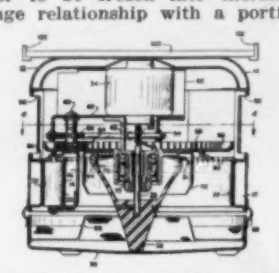
2,778,199. REFRIGERATING UNIT. Leonard H. Read, Hoxsie, R. I.



1. In a refrigerating unit utilizing a liquefied gas as a refrigerant, the combination of an expansion chamber, a cap provided on one end of said expansion chamber, a capillary opening in said cap leading into said chamber from the source of supply of a liquefied gas, a plug secured to the other end of said expansion chamber, a tube secured to said plug and radially spaced from said expansion chamber to provide a well and a plurality of capillary openings leading from said expansion chamber to said well said liquefied gas having a first stage of expansion after passing through said first mentioned capillary opening and into said chamber and a second stage of expansion after passing through said plurality of capillary openings and into said well, water in said well, said water acting as a valve to stop the flow of gas through said plurality of capillary openings as said gas passing through said water freezes said water.

2,778,200. ICE MAKING APPARATUS. Richard S. Gaugler, Dayton, Ohio, assignor to General Motors Corp. Application Nov. 20, 1953, Serial No. 393,366. 8 Claims. (Cl. 62—07.)

1. In combination with a refrigerator having a primary refrigerating system including a primary evaporator, a self-contained automatic ice maker comprising a secondary refrigerating system, said secondary refrigerating system having a secondary condenser arranged in thermal exchange relationship with said primary evaporator and having a secondary evaporator connected to said condenser, means for delivering a stream of water to be frozen into thermal exchange relationship with a portion of



said secondary evaporator, means for causing removal of ice thus formed, said last named means including means for delivering the ice in a multiplicity of pieces to a given storage area, and means for removably supporting said self-contained ice maker in said refrigerator.

(To Be Continued)

SEE IT AT YOUR WHOLESALER
FROM COAST TO COAST
NEWEST KESCO AUTOMATIC
20 FOOT LIFT
CONDENSATE PUMP
MAKES GRAVITY DRAINS UNNECESSARY
MONEY BACK GUARANTEE
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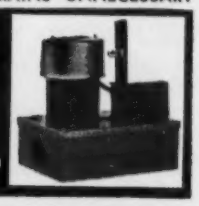

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" $7.50 per insertion. Limit 50 words. 15¢ per word over 50.

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ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS AVAILABLE

MANUFACTURER'S REPRESENTATIVE to sell what we sincerely believe to be the finest walk-in cooler and freezer on the market today. Also complete line of top quality commercial refrigeration. Active sales promotion program. Protected territory available. THE C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

APPLICATION AND sales engineers, technical graduate or equivalent wanted with refrigeration experience. Age 25-32. Interesting work calling on contractors, wholesalers and air conditioning and refrigeration manufacturers in established territories. Starting salary based on experience plus commission after indoctrination. All replies will be kept confidential. Address reply to BOX A5777, Air Conditioning & Refrigeration News.

FIXTURE SALES position available with one of the leading Mid-west distributors. The man we are looking for must be alert, aggressive and have some knowledge of refrigerated fixtures and shelving. We offer unlimited opportunities to the right man. Write, giving personal details and background. BOX A5779, Air Conditioning & Refrigeration News.

SALESMEN WANTED—To sell commercial barbecue equipment to wholesalers—dealers—supermarkets. $1,000.00 or more per month, commissions easily obtainable. Write BOX A5781, Air Conditioning & Refrigeration News.

DIRECTOR OF sales—We need a director of sales and marketing. The plant is located in the Mid-West with air conditioning product lines that are known for quality and have prestige in the building trade. We prefer an individual around 40 years of age with an engineering degree or equivalent who has proven experience and success in sales administration. Write BOX A5782, Air Conditioning & Refrigeration News, outlining your experience and training and attach a recent photo. An interview will be arranged. This is not an agency ad. All replies held in strictest confidence.

EXPERIENCED SALES supervisor capable of handling sales and lay-outs of refrigerated cases, coolers and shelving to supermarkets and retail food stores. Metropolitan Pennsylvania location. Salary, expenses and override on volume. Give complete history, references, age, etc. BOX A 5783, Air Conditioning & Refrigeration News.

DESIGN DRAFTSMAN — With heavy background sheet metal fabrication and assembly. Capable laying out in flat with developments and also designing sheet metal tooling. Act as group leader and checker, Location, Richmond, Virginia. Excellent salary, good opportunity, and advancement possibilities. Send resume of work record and education and please indicate recent earnings. BOX A5784, Air Conditioning & Refrigeration News.

ENGINEER — JUNIOR or graduate M.E. to take over (after training) responsibility of technical publications such as service and operation manuals, overhaul manuals, and parts lists. Experience will lead right man to management team. Excellent starting salary, location, Richmond, Virginia. Send resume of work record, education and past earnings. BOX A5785, Air Conditioning & Refrigeration News.

DISTRICT SALES manager—Large nationally known manufacturer of a complete line of condensing units and all popular size packaged air conditioners, residential and commercial. Permanent position, salary, car expenses, commission. Must be willing to travel well established territory, part of Alabama, Georgia and Florida. Dealer contacts. Experience in this field necessary. State age, education, past connections first letter. All of our employees know of this ad. BOX A5786, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

ATTENTION: OWNERS of Baker compressors and condensers. We carry complete stock of repair parts for all Baker ammonia and Freon compressors and condensers. Valves and ice plant equipment. CENTRAL ICE MACHINE COMPANY, 5014 South 24th Street, Omaha, Nebraska.

NATIONALLY-FAMOUS brand-new condensing units at sensationally low prices. ⅛ h.p. only $34.50. Other sizes up to ¾ h.p. at equally great savings. Also tremendous values in motor compressor domes. ⅛ hp only $31.00 Complete selection of sizes up to 1½ h.p. All units fully guaranteed. Write for complete description and price list. MANN REFRIGERATION SUPPLY CO., 440 Lafayette Street, New York 3, N. Y. GRamercy 3-9000.

BUSINESS OPPORTUNITIES

WANTED TO sell or trade for equivalent operation in Southwestern area, going refrigeration sales and service shop. Large volume of commercial and naval repair work. Valuable franchises. Must move to warmer climate. Approximately $8,000.00 involved. P. O. BOX 149, Astoria, Oregon.

MISCELLANEOUS

ATTENTION SERVICEMEN: Send for free circulars and bulletins on refrigeration parts and equipment. Real money saving values: WALTER W. STARR, 2833 Lincoln Avenue, Chicago 13, Illinois.

Sheet Metal Men--

(Concluded from Page 1, Col. 3)

ference to the AFL-CIO executive council last November. In February, the council appointed a special committee to study the matter.

The committee consisted of George Meany, president of the AFL-CIO, and vice president Joseph Beirne, president of the Communication Workers, and George Harrison, president of the Brotherhood of Railway Clerks.

It visited the Burt plant here last Feb. 18. The results of its study were made know in letters to presidents of the two unions.

Unanimous Committee Finding In Case

Meany's letter said, in part:

"The committee unanimously finds, as a result of a study of all facts in this situation, that the action of the Sheet Metal Workers International Association in putting pressure on the Burt Mfg. Co. are in violation of Section 4, Article 2 of the AFL-CIO constitution, which protects the established collective bargaining relationship of all affiliates. . . .

"At no time so far as we can ascertain, have the Sheet Metal Workers directly challenged the Steel Workers to any election procedings in the Burt plant.

"It is clear . . . that the actions of the Sheet Metal Workers International Association are designed to bring pressure on the Burt Mfg. Co. for the purpose of inducing the Burt Mfg. Co. to terminate its collective bargaining relationship with the Steel Workers Union.

"The committee, therefore, renders its decision on behalf of the executive council, and directs that the Sheet Metal Workers International Association cease and desist from any actions designed to impair the collective bargaining relationship of the United Steel Workers with the Burt Mfg. Co."

Meany pointed out in the letter that the committee was directed "to reach a decision solely on the facts in this case and this decision was not to be considered as a precedent in any other case."

Burt Firm 'Happy'

C. A. Palmer, president of the Burt Mfg. Co., on hearing of the decision said, "We are most happy with this decision.

"By this action, the AFL-CIO has demonstrated that it is willing and able to recognize wrong doing within its own ranks and to take the necessary measures to stop it.

"Now that we are to be free from this attack, we can get back to the business of making ventilators and rebuilding the damage we have suffered."

NRDGA Fights Accepting 'Wasting Assets' as FHA Mortgage Security

WASHINGTON, D. C.—Continuing its fight against inclusion of "rapidly-wasting assets"—appliances and other home goods—in mortgage security for Government-insured mortgages, the National Retail Dry Goods Association has suggested an insertion in the Senate housing bill to stop such action.

John C. Hazen, NRDGA vice president for Government affairs, told Sen. J. William Fulbright, chairman of the Senate Banking and Currency committee, that Congress "must not tolerate" the Federal Housing Administration's decision to include appliances and other goods in the mortgage security.

Language proposed by NRDGA, and which was to be considered at an executive session of the committee on housing legislation, is:

"To be eligible for insurance this section (023 B), a mortgage shall not include as mortgage security property which is not an integral part of the real estate unless such property enhances the security and value of the real estate and has a normal useful life at least as long as the term of the mortgage . . . for the purposes of this section, the administrator shall, in accordance with the regulations to be prescribed, determine the types of personal property which shall not be includable as part of the mortgage security under this section."

NRDGA feels Congress should determine just what function FHA should perform, Hazen told Sen. Fulbright—stabilizing the mortgage market or serving as a competitive force in the mortgage financing area.

Hazen charged that "in accepting rapidly-wasting assets" in mortgage security, FHA was encouraging consumers "to buy goods they cannot afford, just because they can pay for them over a period of 30 years."

In addition, the National Retail Furniture Association advised Congress that the Government is on "extremely risky ground" in encouraging consumers "to over-buy appliances and other durable goods on-the-cuff."

It also renewed its appeal to a Senate Housing subcommittee to support legislation barring the FHA from including so-called "rapidly-wasting assets" in mortgage security for U. S.-backed mortgage insurance.

Federal Housing Commissioner Norman Mason has sought to justify FHA mortgage security policy "as enabling new homeowners to obtain necessary equipment they could not otherwise afford."

Feldmann Named--

(Concluded from Page 1, Col. 5)

president in charge of sales.

He was elected vice president of Worthington in charge of sales in 1950, and executive vice president in 1955. He was a member of the board of directors since last September.

Feldmann

Schwanhausser joined Worthington in 1915 in the engineering department of the Harrison, N. J. Works, and served successively as assistant works manager at Harrison and works manager at Buffalo. He was elected executive vice president in 1949.

Dunham-Bush acquires Brunner Mfg. Co.
The Dunham-Bush acquisition of the Brunner Manufacturing Company and its subsidiary, The Brunner Company, brings under one management the manufacture of well established lines of heat transfer equipment and accessories, as well as condensing units and compressors, to satisfy the requirements of the Air Conditioning, Refrigeration, and Heating Industry.
Close to $109,000 was spent
Two news services were initiated in 1956. The job training
program for the retarded
the home care program
added to the

What this means to YOU . . .

The combining of these two well established companies signifies greater things to come for our industry. Combined research facilities and enlarged staffs of skilled development engineers provide the means for continued advancements in new and improved products.

Our prime obligation is to serve the best interests of our rapidly growing industry — to assist in every way possible the realization of its full potential. Dunham-Bush, with the acquisition of Brunner, is better equipped than ever to fulfill that obligation. You can expect improved service and delivery on all our products . . . the assistance of our expanded engineering staff in solving your application problems.

We intend to prove to you that you benefit most when you entrust your air conditioning, refrigeration and heating orders to one source — one responsibility.

Thanks to our Dunham-Bush and Brunner customers for their continued cooperation.

Cecil Boling
PRESIDENT

Dunham-Bush, Inc.

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